

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: P775651

Luminaire Tested: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-3000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775651
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B054)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-3000K
Description: 4 INCH ROUND NARROW LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

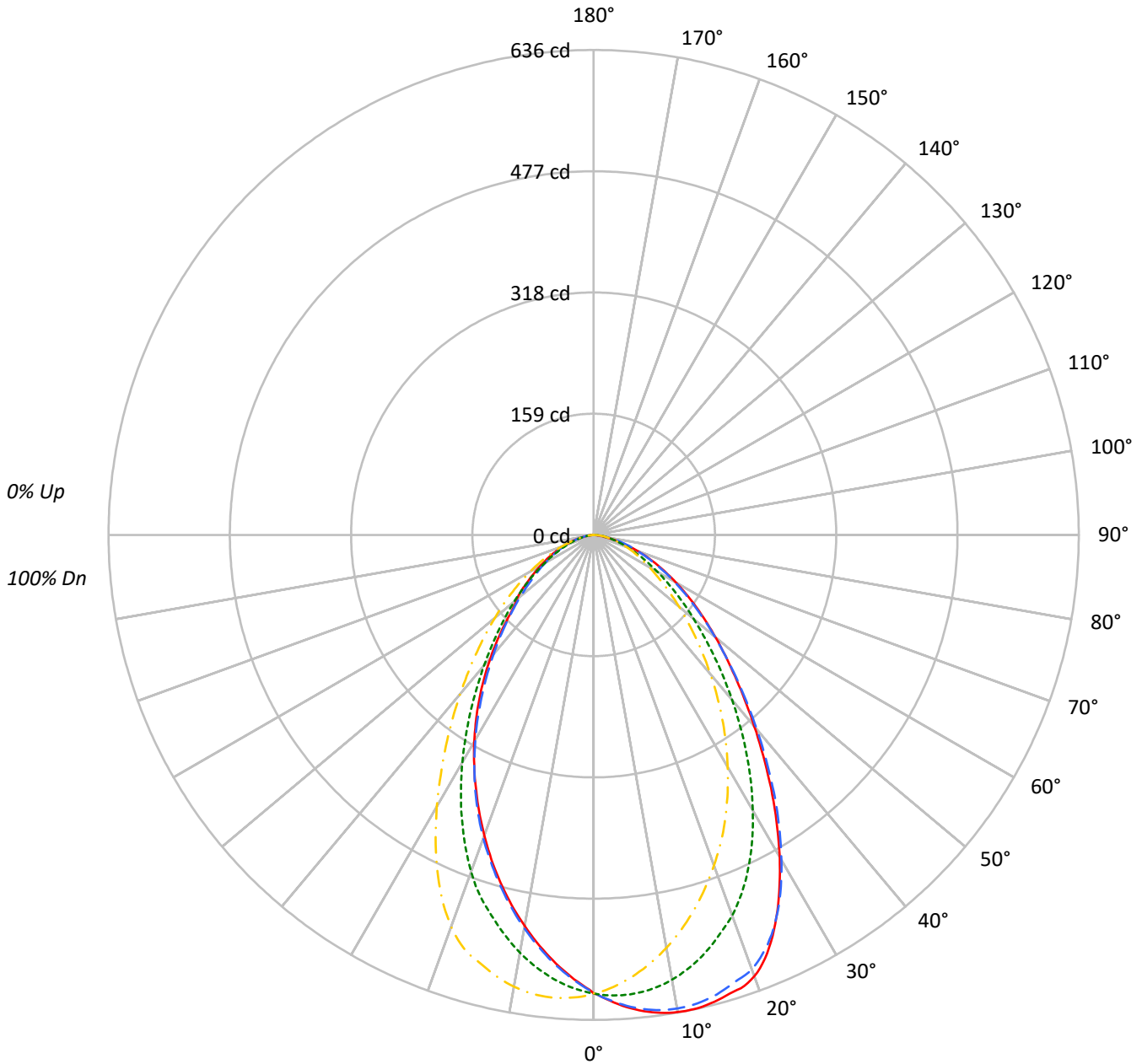
Lumens per Lamp: N/A
Luminaire Lumens: 998.3 lumens
Efficiency: N/A
Efficacy: 99.8 lumens/watt
Spacing Criteria (0/90/45): 1.05 / 1.01 / 1.07
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88								
2	103	96	90	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77								
3	95	86	79	74	93	85	78	73	82	77	72	79	75	71	77	73	70	68								
4	88	78	71	65	86	77	70	64	74	68	64	72	67	63	70	66	62	60								
5	82	71	63	57	80	70	63	57	68	62	57	66	60	56	64	59	56	54								
6	77	65	57	51	75	64	57	51	62	56	51	61	55	50	59	54	50	48								
7	72	60	52	47	70	59	52	46	58	51	46	56	50	46	55	50	45	44								
8	67	55	48	42	66	55	47	42	53	47	42	52	46	42	51	46	42	40								
9	63	51	44	39	62	51	44	39	50	43	38	49	43	38	48	42	38	36								
10	60	48	40	36	58	47	40	36	46	40	35	45	39	35	44	39	35	34								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	75648	75648	75648	75648
5°	78906	76304	71301	73941
10°	81211	75678	66554	71077
15°	82265	73822	61484	67347
20°	82485	71115	56142	62892
25°	78192	66708	50781	56794
30°	70872	60642	45485	50019
35°	62283	53649	40052	43125
40°	53803	46345	34533	36718
45°	46613	39511	29171	31235
50°	40783	33538	25766	26588
55°	35830	28524	22907	22490
60°	31337	24239	20186	18852
65°	27158	20607	17778	15664
70°	22188	17368	15013	12915
75°	16630	14733	12156	10697
80°	10001	12828	8624	8479
85°	3899	11985	3032	5054

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°

Vertical Angle: 45°

Luminance: 47858 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.2	5.6
10°-20°	153.7	15.4
20°-30°	208.2	20.9
30°-40°	202.3	20.3
40°-50°	160.2	16.0
50°-60°	112.2	11.2
60°-70°	68.0	6.8
70°-80°	31.2	3.1
80°-90°	6.3	0.6
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°	418.0	41.9
0°-40°	620.4	62.1
0°-60°	892.7	89.4
0°-90°	998.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	998.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	601	601	601	601	601	
5°	625	604	564	585	625	60
15°	631	567	472	517	631	178
25°	563	480	366	409	563	257
35°	405	349	261	281	405	253
45°	262	222	164	176	262	203
55°	163	130	104	102	163	147
65°	91	69	60	53	91	90
75°	34	30	25	22	34	37
85°	3	8	2	4	3	4
90°	0	1	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°	601.1	601.1	601.1	601.1	601.1	601.1	601.1	601.1	601.1	601.1	601.1
0.5°	602.9	603.3	603.1	602.7	602.4	601.3	600.5	600.2	596.8	596.7	597.3
1°	605.8	606.2	605.9	604.7	603.2	600.8	598.9	597.5	593.6	593.6	594.4
1.5°	608.6	609.1	608.3	606.3	603.8	600.3	597.1	595.0	590.2	590.0	591.2
2°	611.2	611.9	610.6	608.0	604.2	599.5	595.3	592.1	586.8	586.4	587.9
2.5°	613.8	614.7	612.9	609.6	604.6	598.7	593.3	589.4	583.3	582.9	584.5
3°	616.2	617.1	615.2	610.9	604.7	597.5	591.1	586.2	579.6	579.2	581.1
3.5°	618.6	619.6	617.1	612.1	604.8	596.4	588.9	583.3	575.9	575.3	577.6
4°	620.7	621.8	619.1	613.1	604.6	595.1	586.5	580.0	572.2	571.4	574.0
4.5°	622.7	624.0	620.8	614.1	604.4	593.8	584.1	576.6	568.3	567.5	570.2
5°	624.6	626.1	622.4	614.9	604.0	592.1	581.4	573.3	564.4	563.4	566.5
5.5°	626.3	628.0	624.0	615.5	603.5	590.5	578.8	569.8	560.2	559.2	562.5
6°	627.9	629.8	625.3	616.1	602.7	588.6	575.8	566.1	556.2	554.9	558.6
6.5°	629.4	631.4	626.5	616.5	601.9	586.7	573.0	562.5	552.0	550.7	554.4
7°	630.7	632.8	627.5	616.7	601.0	584.6	569.9	558.8	547.8	546.3	550.1
7.5°	631.9	634.2	628.5	616.7	599.8	582.4	566.8	554.9	543.5	541.8	545.9
8°	632.8	635.3	629.3	616.7	598.6	580.1	563.6	550.9	539.1	537.3	541.6
8.5°	633.8	636.3	629.9	616.5	597.2	577.8	560.2	546.8	534.6	532.9	537.4
9°	634.5	637.2	630.4	616.1	595.7	575.1	556.7	542.9	530.1	528.2	532.9
9.5°	635.1	637.9	630.6	615.5	594.1	572.4	553.3	538.7	525.4	523.5	528.3
10°	635.5	638.4	630.8	614.8	592.2	569.6	549.7	534.6	520.8	518.8	523.7
10.5°	635.7	638.9	630.7	614.0	590.3	566.7	545.9	530.2	516.1	514.0	519.1
11°	635.8	639.1	630.6	613.0	588.2	563.7	542.1	525.8	511.5	509.2	514.4
11.5°	635.8	639.2	630.3	611.8	585.9	560.6	538.3	521.4	506.7	504.3	509.6
12°	635.6	639.2	629.8	610.6	583.6	557.4	534.3	517.1	501.9	499.4	504.7
12.5°	635.3	639.0	629.2	609.2	581.0	553.9	530.2	512.5	497.0	494.3	499.9
13°	634.8	638.5	628.3	607.6	578.5	550.5	526.1	507.9	492.1	489.4	495.1
13.5°	634.1	638.1	627.5	605.9	575.7	547.1	522.0	503.2	487.1	484.3	490.1
14°	633.3	637.3	626.4	603.9	572.9	543.3	517.6	498.5	482.1	479.1	485.1
14.5°	632.4	636.5	625.2	601.8	569.8	539.5	513.2	493.7	477.0	474.1	480.0
15°	631.4	635.6	623.8	599.7	566.6	535.5	508.8	488.9	471.9	468.8	474.9
15.5°	630.1	634.4	622.2	597.4	563.5	531.6	504.3	484.0	466.8	463.7	469.7
16°	628.7	633.1	620.5	595.0	560.0	527.6	499.6	479.1	461.7	458.5	464.6
16.5°	627.5	631.7	618.7	592.4	556.5	523.5	495.0	474.1	456.5	453.3	459.4
17°	626.6	630.4	616.8	589.8	552.9	519.2	490.4	469.2	451.3	447.8	454.3
17.5°	625.8	629.5	614.9	586.8	549.3	514.9	485.6	464.1	446.0	442.5	449.1
18°	625.0	628.7	613.4	584.2	545.6	510.5	480.7	459.0	440.7	437.2	443.8
18.5°	623.5	627.7	611.9	581.5	542.1	506.2	476.0	453.9	435.4	431.9	438.6
19°	621.5	626.4	610.5	579.1	538.5	501.9	471.1	448.8	430.1	426.6	433.6
19.5°	618.9	624.4	608.7	576.5	534.9	497.6	466.4	443.7	424.6	421.3	428.4
20°	615.9	621.9	606.2	573.7	531.0	493.0	461.3	438.6	419.2	415.9	423.1
20.5°	612.5	619.0	603.3	570.3	526.8	488.5	456.5	433.3	413.8	410.5	417.7
21°	608.6	615.7	599.8	566.8	522.2	483.5	451.3	428.0	408.6	405.2	412.2



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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°	594.1	603.3	588.0	553.8	507.9	468.3	435.9	412.2	392.4	389.0	395.8
23°	588.4	598.3	583.5	549.2	502.6	463.0	430.5	406.8	387.0	383.7	390.2
23.5°	582.4	593.1	578.6	544.3	497.4	457.7	425.2	401.5	381.8	378.3	384.5
24°	576.3	587.4	573.6	539.1	491.9	452.0	419.6	396.2	376.4	373.0	378.8
24.5°	569.8	581.4	568.1	533.6	486.3	446.4	414.1	390.7	371.0	367.6	373.2
25°	563.1	575.1	562.4	528.0	480.4	440.7	408.4	385.3	365.7	362.3	367.6
25.5°	556.2	568.5	556.2	522.3	474.6	434.8	402.9	379.9	360.4	356.8	361.8
26°	549.2	561.7	550.0	516.2	468.7	429.0	397.4	374.5	355.2	351.3	356.1
26.5°	541.8	554.9	543.6	510.2	462.6	423.0	391.7	369.0	349.8	346.0	350.4
27°	534.6	547.7	536.9	503.9	456.3	417.0	386.0	363.4	344.6	340.6	344.7
27.5°	527.2	540.3	529.9	497.5	450.0	411.1	380.2	358.0	339.2	335.2	338.9
28°	519.3	532.7	522.6	490.7	443.6	405.2	374.5	352.6	334.0	329.8	333.0
28.5°	511.6	524.9	515.0	484.0	437.3	398.9	368.7	347.0	328.8	324.4	327.3
29°	503.7	517.2	507.7	477.2	430.7	392.7	362.9	341.5	323.6	319.0	321.6
29.5°	495.6	509.3	500.2	470.0	424.0	386.7	357.2	336.1	318.3	313.7	315.9
30°	487.7	501.1	492.5	463.1	417.3	380.5	351.3	330.7	313.0	308.3	310.1
30.5°	479.5	493.1	484.5	455.9	410.6	374.2	345.5	325.2	307.6	303.0	304.5
31°	471.3	484.8	476.6	448.4	404.0	368.0	339.8	319.7	302.4	297.5	298.9
31.5°	463.2	476.5	468.6	441.1	397.1	361.7	334.0	314.3	297.2	292.1	293.4
32°	454.8	468.0	460.4	433.4	390.3	355.6	328.3	308.9	292.0	286.9	287.8
32.5°	446.5	459.5	452.3	425.9	383.4	349.4	322.3	303.5	286.7	281.6	282.0
33°	438.2	451.2	444.2	418.3	376.5	343.0	316.6	298.2	281.5	276.3	276.4
33.5°	429.8	442.8	436.4	410.7	369.8	336.8	310.9	292.5	276.3	271.0	271.1
34°	421.7	434.3	428.1	402.9	362.8	330.4	305.2	287.2	271.1	265.7	265.5
34.5°	413.5	425.8	419.9	395.3	355.9	324.2	299.5	281.9	265.8	260.5	260.1
35°	405.4	417.4	411.6	387.6	349.2	318.1	293.7	276.6	260.7	255.4	254.6
35.5°	397.2	409.1	403.4	380.1	342.2	311.8	288.2	271.2	255.6	250.3	249.4
36°	388.9	400.9	395.4	372.5	335.4	305.6	282.6	266.0	250.4	245.2	244.1
36.5°	381.1	392.7	387.3	364.9	328.5	299.4	276.8	260.8	245.3	240.1	238.9
37°	373.0	384.4	379.3	357.5	321.9	293.5	271.1	255.6	240.1	235.0	233.7
37.5°	365.3	376.2	371.4	350.1	315.0	287.2	265.5	250.4	235.2	230.1	228.6
38°	357.4	368.2	363.2	342.4	308.5	281.2	260.1	245.4	230.1	225.1	223.5
38.5°	349.9	360.3	355.5	335.3	301.8	275.2	254.4	240.2	225.1	220.1	218.7
39°	342.3	352.4	347.6	327.8	295.3	269.4	248.9	235.2	220.2	215.2	213.7
39.5°	335.0	344.8	340.3	320.9	288.6	263.4	243.4	230.1	215.2	210.4	208.8
40°	327.5	337.2	332.6	313.5	282.1	257.5	238.1	225.1	210.2	205.5	204.0
40.5°	320.5	329.9	325.2	306.7	275.8	251.4	232.7	219.9	205.4	200.7	199.4
41°	313.5	322.3	317.8	299.7	269.4	245.9	227.5	215.0	200.6	196.1	194.7
41.5°	306.4	315.4	310.7	292.8	263.1	240.0	222.3	210.0	195.8	191.4	190.2
42°	299.7	308.3	303.6	285.8	257.1	234.4	217.2	205.3	191.1	186.9	186.0
42.5°	293.2	301.3	296.7	279.5	251.0	229.0	212.1	200.4	186.5	182.5	181.7
43°	286.6	294.7	290.0	273.0	245.0	223.6	207.2	195.7	181.8	178.1	177.3
43.5°	280.3	288.1	283.2	266.5	239.1	218.2	202.2	191.0	177.2	173.9	173.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	261.9	268.9	263.9	247.8	222.0	202.8	187.9	177.6	163.9	162.0	160.9
45.5°	256.0	262.9	257.7	241.8	216.5	197.8	183.4	173.4	159.6	158.2	157.0
46°	250.3	256.9	251.6	235.9	211.0	193.0	178.9	169.2	155.6	154.3	153.1
46.5°	244.7	251.0	245.6	230.1	205.7	188.1	174.6	165.0	151.6	150.6	149.2
47°	239.2	245.2	239.9	224.4	200.4	183.3	170.2	161.0	147.8	147.0	145.5
47.5°	233.9	239.6	234.1	218.9	195.3	178.7	166.0	157.0	144.2	143.5	141.8
48°	228.5	234.0	228.4	213.2	190.2	174.0	161.8	153.1	141.1	140.1	138.3
48.5°	223.2	228.7	223.0	208.0	185.3	169.6	157.6	149.2	138.3	136.7	134.7
49°	218.2	223.4	217.6	202.8	180.5	165.2	153.6	145.6	135.9	133.4	131.4
49.5°	213.2	218.2	212.4	197.7	175.9	161.0	149.5	141.9	133.6	130.4	128.0
50°	208.3	213.2	207.3	192.6	171.3	156.8	145.7	138.3	131.6	127.5	124.8
50.5°	203.5	208.1	202.1	187.6	166.7	152.6	141.9	134.9	129.5	124.6	121.4
51°	198.7	203.2	197.1	182.8	162.2	148.6	138.1	131.5	127.2	122.1	118.3
51.5°	194.0	198.4	192.3	178.1	158.0	144.7	134.5	128.2	124.4	119.8	115.4
52°	189.4	193.6	187.5	173.3	153.7	140.9	130.9	125.1	121.4	117.0	112.3
52.5°	184.9	188.9	182.8	168.8	149.5	137.1	127.4	122.0	118.4	114.2	109.3
53°	180.5	184.4	178.1	164.4	145.5	133.3	123.9	119.1	115.6	111.5	106.5
53.5°	176.1	179.8	173.6	159.9	141.5	129.6	120.6	116.2	112.6	108.7	103.6
54°	171.8	175.4	169.1	155.7	137.6	126.1	117.3	113.5	109.8	106.1	100.9
54.5°	167.5	171.0	164.6	151.5	133.6	122.6	114.0	111.1	107.1	103.4	98.2
55°	163.3	166.8	160.6	147.3	130.0	119.2	111.0	108.5	104.4	101.0	95.7
55.5°	159.1	162.5	156.3	143.3	126.3	115.8	107.9	106.0	101.8	98.2	93.1
56°	155.0	158.3	152.1	139.2	122.7	112.4	104.9	103.3	99.1	95.7	90.7
56.5°	151.1	154.2	148.0	135.4	119.2	109.2	101.9	100.8	96.6	93.3	88.4
57°	147.2	150.3	144.0	131.6	115.7	106.0	99.0	98.2	94.0	91.0	86.2
57.5°	143.1	146.2	140.2	127.8	112.3	102.9	96.3	95.8	91.7	88.5	84.1
58°	139.3	142.2	136.2	124.1	108.9	99.9	93.6	93.3	89.3	86.3	81.8
58.5°	135.6	138.3	132.4	120.5	105.9	96.9	91.0	90.9	87.0	84.1	79.7
59°	131.8	134.6	128.7	116.9	102.6	93.9	88.4	88.5	84.7	81.8	77.4
59.5°	128.1	130.7	125.0	113.4	99.5	91.1	86.1	86.3	82.4	79.6	75.4
60°	124.5	127.2	121.4	110.1	96.3	88.3	83.7	84.1	80.2	77.3	73.3
60.5°	121.0	123.5	117.8	106.6	93.4	85.8	81.4	81.8	77.9	75.2	71.3
61°	117.4	120.0	114.3	103.4	90.5	83.1	79.1	79.6	75.8	73.1	69.3
61.5°	113.9	116.3	110.8	100.2	87.7	80.5	76.7	77.3	73.6	71.0	67.3
62°	110.6	113.0	107.5	97.0	85.0	77.8	74.7	75.2	71.6	69.0	65.4
62.5°	107.3	109.6	104.2	93.9	82.2	75.3	72.5	73.1	69.5	66.9	63.4
63°	103.9	106.2	100.9	90.9	79.5	72.8	70.5	71.0	67.5	65.1	61.5
63.5°	100.7	102.8	97.7	87.9	76.7	70.5	68.4	69.0	65.5	63.0	59.7
64°	97.5	99.6	94.6	85.0	74.1	68.1	66.6	66.9	63.5	61.2	57.8
64.5°	94.4	96.4	91.5	82.1	71.6	65.9	64.7	65.0	61.6	59.3	56.1
65°	91.2	93.3	88.4	79.3	69.2	63.7	62.8	63.1	59.7	57.4	54.3
65.5°	88.0	90.1	85.4	76.6	66.7	61.5	60.9	61.2	57.6	55.6	52.5
66°	84.8	87.1	82.5	74.0	64.4	59.4	59.2	59.3	55.7	53.8	50.9



TEST NUMBER: P775651

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	75.4	78.0	74.0	66.1	57.6	53.5	53.8	53.8	49.9	48.4	45.9
68°	72.3	75.1	71.2	63.7	55.5	51.5	52.1	51.9	48.0	46.6	44.3
68.5°	69.2	72.1	68.5	61.3	53.3	49.7	50.4	50.1	46.2	44.8	42.7
69°	66.2	69.2	66.0	58.9	51.3	47.8	48.8	48.4	44.4	43.1	41.2
69.5°	63.2	66.3	63.4	56.6	49.3	46.2	47.0	46.5	42.5	41.4	39.7
70°	60.3	63.4	60.9	54.3	47.2	44.5	45.5	44.8	40.8	39.8	38.1
70.5°	57.5	60.7	58.4	52.0	45.3	42.8	43.9	43.1	39.2	38.1	36.7
71°	54.7	58.0	56.0	49.9	43.5	41.3	42.3	41.4	37.4	36.4	35.2
71.5°	51.9	55.3	53.7	47.7	41.6	39.8	40.8	39.8	35.8	34.9	33.8
72°	49.2	52.7	51.4	45.7	39.9	38.3	39.3	38.1	34.2	33.4	32.3
72.5°	46.6	50.3	49.1	43.8	38.1	36.8	37.8	36.5	32.5	31.7	30.9
73°	44.1	47.7	46.8	41.8	36.5	35.3	36.3	35.0	30.9	30.3	29.6
73.5°	41.4	45.4	44.7	39.8	34.9	34.0	34.9	33.4	29.4	28.8	28.3
74°	39.0	42.9	42.4	37.9	33.4	32.6	33.5	31.9	27.8	27.2	26.9
74.5°	36.4	40.6	40.4	36.6	31.8	31.3	32.1	30.4	26.4	25.8	25.5
75°	34.2	38.4	38.4	34.9	30.3	30.0	30.7	29.0	25.0	24.4	24.3
75.5°	31.9	36.1	36.2	33.2	28.9	28.8	29.4	27.5	23.6	23.1	23.0
76°	29.7	34.2	34.4	31.3	27.5	27.5	28.1	26.1	22.1	21.6	21.7
76.5°	27.4	32.1	32.5	29.6	26.1	26.3	26.7	24.7	20.7	20.3	20.5
77°	25.3	30.1	30.8	27.9	24.9	25.1	25.4	23.4	19.4	19.0	19.3
77.5°	23.2	28.1	29.0	26.4	23.6	24.0	24.1	22.0	18.1	17.7	18.2
78°	21.1	26.1	27.1	25.0	22.3	22.8	23.0	20.7	16.8	16.4	17.0
78.5°	19.2	24.4	25.4	23.6	21.1	21.6	21.6	19.4	15.5	15.2	15.8
79°	17.2	22.5	23.8	22.1	19.9	20.5	20.5	18.1	14.3	14.0	14.7
79.5°	15.5	20.8	22.1	20.7	18.8	19.5	19.3	16.8	13.1	12.9	13.7
80°	13.8	19.1	20.5	19.4	17.7	18.4	18.2	15.6	11.9	11.6	12.5
80.5°	12.2	17.5	19.0	18.2	16.6	17.3	17.0	14.5	10.7	10.5	11.5
81°	10.7	16.0	17.5	16.9	15.6	16.3	15.9	13.3	9.7	9.5	10.5
81.5°	9.3	14.6	16.1	15.7	14.6	15.3	14.8	12.1	8.6	8.5	9.6
82°	7.9	13.2	14.7	14.6	13.6	14.3	13.8	11.0	7.5	7.4	8.7
82.5°	6.5	11.7	13.4	13.5	12.6	13.3	12.6	10.0	6.4	6.4	7.8
83°	5.4	10.4	12.1	12.3	11.7	12.3	11.6	9.0	5.3	5.4	6.8
83.5°	4.4	9.2	10.9	11.3	10.8	11.4	10.7	8.0	4.4	4.6	5.9
84°	3.6	7.9	9.8	10.3	9.9	10.4	9.8	6.9	3.5	3.9	5.1
84.5°	3.1	6.7	8.7	9.4	9.1	9.6	8.9	5.9	2.7	3.3	4.4
85°	2.7	5.6	7.7	8.5	8.3	8.7	8.1	5.1	2.1	2.8	3.6
85.5°	2.1	4.6	6.7	7.5	7.4	7.9	7.1	4.4	1.8	2.2	2.9
86°	1.7	3.7	5.8	6.7	6.6	6.9	6.2	3.8	1.5	1.8	2.0
86.5°	1.4	3.1	5.0	5.8	5.8	6.0	5.4	3.3	1.2	1.3	1.4
87°	1.2	2.4	4.2	5.1	5.1	5.2	4.6	2.7	0.9	0.9	0.8
87.5°	0.9	1.8	3.6	4.4	4.4	4.4	3.8	2.1	0.6	0.5	0.3
88°	0.7	1.2	3.0	3.7	3.6	3.7	3.1	1.6	0.4	0.2	0.1
88.5°	0.5	0.8	2.2	3.0	2.9	2.9	2.3	1.1	0.1	0.1	0.0



TEST NUMBER: P775651
CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.2	0.6	1.1	0.9	0.8	0.4	0.1	0.0	0.1	0.0



TEST NUMBER: P775651

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	601.1	601.1	601.1	601.1	601.1	601.1
0.5°	598.4	600.6	601.7	603.4	604.9	602.9
1°	596.1	599.4	601.8	604.5	607.0	605.8
1.5°	593.7	598.1	601.7	605.6	609.1	608.6
2°	591.2	596.7	601.4	606.5	611.0	611.2
2.5°	588.6	595.1	601.1	607.3	612.8	613.8
3°	585.8	593.5	600.5	607.9	614.5	616.2
3.5°	582.9	591.6	599.9	608.6	616.0	618.6
4°	579.9	589.7	599.0	608.9	617.2	620.7
4.5°	576.8	587.5	598.1	609.1	618.5	622.7
5°	573.6	585.3	596.9	609.2	619.7	624.6
5.5°	570.2	583.1	595.6	609.1	620.6	626.3
6°	566.8	580.5	594.3	608.9	621.3	627.9
6.5°	563.4	577.9	592.7	608.5	621.9	629.4
7°	559.6	575.1	591.0	607.8	622.4	630.7
7.5°	555.9	572.2	589.2	607.1	622.8	631.9
8°	552.2	569.4	587.2	606.3	622.9	632.8
8.5°	548.2	566.2	585.1	605.4	622.9	633.8
9°	544.2	563.0	582.9	604.3	622.8	634.5
9.5°	540.0	559.6	580.5	602.9	622.6	635.1
10°	535.8	556.2	578.1	601.5	622.2	635.5
10.5°	531.5	552.7	575.5	600.0	621.7	635.7
11°	527.3	549.1	572.7	598.3	621.0	635.8
11.5°	522.9	545.3	569.7	596.4	620.1	635.8
12°	518.4	541.3	566.8	594.5	619.1	635.6
12.5°	513.9	537.5	563.8	592.3	617.9	635.3
13°	509.3	533.5	560.5	590.1	616.7	634.8
13.5°	504.5	529.4	557.1	587.9	615.3	634.1
14°	499.7	525.1	553.7	585.2	613.7	633.3
14.5°	494.9	521.0	550.4	582.7	612.1	632.4
15°	490.3	516.9	546.9	580.2	610.2	631.4
15.5°	485.5	512.8	543.8	578.1	608.7	630.1
16°	480.8	508.6	540.6	576.1	607.4	628.7
16.5°	476.1	504.5	537.5	573.9	606.2	627.5
17°	471.3	500.3	533.8	571.2	604.8	626.6
17.5°	466.4	495.8	529.6	567.9	602.8	625.8
18°	461.5	491.1	525.1	564.3	600.1	625.0
18.5°	456.4	486.1	520.3	560.2	596.8	623.5
19°	451.1	480.6	515.3	555.9	593.2	621.5
19.5°	445.7	475.2	510.2	551.2	589.4	618.9
20°	440.1	469.6	505.0	546.3	585.0	615.9
20.5°	434.4	464.1	499.4	541.2	580.5	612.5
21°	428.8	458.2	493.7	535.7	575.5	608.6

TEST NUMBER: P775651

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	411.3	440.4	476.1	518.3	558.8	594.1
23°	405.4	434.2	469.8	512.2	552.6	588.4
23.5°	399.2	428.0	463.4	505.6	546.1	582.4
24°	393.2	421.7	457.1	499.1	539.3	576.3
24.5°	387.1	415.4	450.5	492.2	532.5	569.8
25°	381.1	409.0	443.8	485.2	525.2	563.1
25.5°	375.0	402.7	437.0	478.2	518.1	556.2
26°	368.8	396.3	430.2	471.0	510.6	549.2
26.5°	362.8	389.8	423.5	463.7	503.3	541.8
27°	356.7	383.2	416.5	456.3	495.7	534.6
27.5°	350.6	376.7	409.5	448.8	487.9	527.2
28°	344.5	370.2	402.3	441.2	480.0	519.3
28.5°	338.5	363.5	395.4	433.6	472.4	511.6
29°	332.3	357.2	388.4	426.1	464.6	503.7
29.5°	326.2	350.7	381.3	418.3	456.7	495.6
30°	320.2	344.2	374.2	411.1	448.7	487.7
30.5°	314.2	337.6	367.0	403.4	440.8	479.5
31°	308.2	331.3	360.0	395.8	433.0	471.3
31.5°	302.2	324.8	353.0	388.3	425.2	463.2
32°	296.1	318.4	346.0	380.9	417.1	454.8
32.5°	290.4	312.0	339.1	373.3	409.2	446.5
33°	284.5	305.6	332.1	366.3	401.4	438.2
33.5°	278.6	299.3	325.4	359.0	393.5	429.8
34°	272.9	293.1	318.6	351.7	386.1	421.7
34.5°	267.2	286.8	311.9	344.6	378.2	413.5
35°	261.4	280.7	305.3	337.5	370.7	405.4
35.5°	255.8	274.5	298.7	330.5	363.1	397.2
36°	250.3	268.7	292.4	323.9	355.8	388.9
36.5°	244.8	262.7	286.0	316.7	348.5	381.1
37°	239.3	256.8	280.0	310.2	341.1	373.0
37.5°	234.1	250.9	273.7	303.6	334.0	365.3
38°	228.8	245.3	267.7	297.1	326.8	357.4
38.5°	223.7	239.7	261.6	290.5	319.8	349.9
39°	218.7	234.2	255.8	284.4	313.2	342.3
39.5°	213.5	228.7	250.1	278.2	306.3	335.0
40°	208.5	223.5	244.3	272.0	299.6	327.5
40.5°	203.7	218.2	238.8	265.8	293.1	320.5
41°	198.9	213.2	233.3	260.0	286.6	313.5
41.5°	194.1	208.1	228.0	254.1	280.3	306.4
42°	189.6	203.2	222.7	248.5	274.1	299.7
42.5°	185.0	198.3	217.4	242.9	268.0	293.2
43°	180.7	193.7	212.3	237.4	261.9	286.6
43.5°	176.3	188.9	207.2	231.9	256.1	280.3



TEST NUMBER: P775651

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	163.8	175.5	192.6	216.1	239.2	261.9
45.5°	159.8	171.2	188.0	211.0	233.8	256.0
46°	155.9	167.0	183.3	206.0	228.5	250.3
46.5°	152.0	162.8	178.9	201.2	223.2	244.7
47°	148.1	158.7	174.3	196.3	218.1	239.2
47.5°	144.4	154.7	170.0	191.6	213.0	233.9
48°	140.8	150.9	165.8	186.9	208.1	228.5
48.5°	137.2	147.0	161.5	182.3	203.2	223.2
49°	133.5	143.2	157.4	177.9	198.5	218.2
49.5°	130.1	139.4	153.3	173.5	193.8	213.2
50°	126.7	135.8	149.2	169.0	189.1	208.3
50.5°	123.3	132.2	145.4	164.7	184.6	203.5
51°	120.1	128.6	141.5	160.7	180.1	198.7
51.5°	116.8	125.1	137.7	156.5	175.9	194.0
52°	113.5	121.8	133.9	152.5	171.4	189.4
52.5°	110.4	118.4	130.4	148.5	167.2	184.9
53°	107.3	115.2	126.7	144.5	163.0	180.5
53.5°	104.2	111.9	123.2	140.8	158.8	176.1
54°	101.3	108.6	119.8	136.9	154.7	171.8
54.5°	98.4	105.6	116.4	133.1	150.9	167.5
55°	95.6	102.5	113.0	129.4	146.8	163.3
55.5°	92.7	99.6	109.8	125.9	143.0	159.1
56°	90.1	96.6	106.4	122.3	139.1	155.0
56.5°	87.5	93.7	103.3	118.8	135.4	151.1
57°	85.0	90.8	100.2	115.4	131.6	147.2
57.5°	82.4	88.1	97.1	112.0	127.9	143.1
58°	79.9	85.3	94.2	108.6	124.2	139.3
58.5°	77.3	82.6	91.3	105.5	120.8	135.6
59°	75.0	80.0	88.3	102.2	117.2	131.8
59.5°	72.6	77.4	85.6	99.0	113.8	128.1
60°	70.5	74.9	82.7	96.0	110.4	124.5
60.5°	68.2	72.4	80.1	92.9	107.1	121.0
61°	66.1	70.1	77.3	90.0	103.6	117.4
61.5°	64.0	67.6	74.8	87.0	100.6	113.9
62°	61.9	65.3	72.2	84.1	97.4	110.6
62.5°	59.9	63.0	69.7	81.3	94.3	107.3
63°	57.9	60.9	67.2	78.4	91.1	103.9
63.5°	56.0	58.8	64.9	75.8	88.1	100.7
64°	54.2	56.6	62.4	73.0	85.2	97.5
64.5°	52.4	54.6	60.2	70.4	82.2	94.4
65°	50.7	52.6	57.9	67.8	79.4	91.2
65.5°	49.1	50.6	55.8	65.3	76.6	88.0
66°	47.4	48.7	53.6	62.7	73.9	84.8



TEST NUMBER: P775651

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	42.7	43.2	47.3	55.6	65.5	75.4
68°	41.3	41.5	45.4	53.3	62.8	72.3
68.5°	39.8	39.9	43.6	51.1	60.2	69.2
69°	38.4	38.3	41.7	48.9	57.5	66.2
69.5°	36.9	36.5	39.8	46.8	55.0	63.2
70°	35.5	35.1	38.0	44.8	52.5	60.3
70.5°	34.2	33.8	36.4	42.7	50.1	57.5
71°	32.8	32.3	34.9	40.7	47.6	54.7
71.5°	31.4	30.9	33.3	38.8	45.3	51.9
72°	30.2	29.6	31.6	36.9	42.9	49.2
72.5°	29.0	28.3	30.0	35.1	40.7	46.6
73°	27.5	26.9	28.6	33.4	38.6	44.1
73.5°	26.3	25.7	27.0	31.5	36.2	41.4
74°	25.1	24.5	25.6	29.8	34.3	39.0
74.5°	24.0	23.3	24.3	28.1	32.3	36.4
75°	22.7	22.0	23.0	26.4	30.4	34.2
75.5°	21.6	20.9	21.6	24.8	28.5	31.9
76°	20.5	19.8	20.4	23.2	26.6	29.7
76.5°	19.4	18.7	19.1	21.7	24.8	27.4
77°	18.3	17.6	18.0	20.2	23.1	25.3
77.5°	17.2	16.6	16.7	18.8	21.3	23.2
78°	16.1	15.6	15.6	17.4	19.7	21.1
78.5°	15.1	14.6	14.6	16.0	18.1	19.2
79°	14.1	13.7	13.6	14.8	16.5	17.2
79.5°	13.1	12.6	12.4	13.5	15.0	15.5
80°	12.0	11.7	11.5	12.3	13.6	13.8
80.5°	11.1	10.9	10.5	11.2	12.1	12.2
81°	10.2	10.0	9.7	10.1	10.8	10.7
81.5°	9.3	9.1	8.8	9.0	9.5	9.3
82°	8.4	8.3	7.9	8.1	8.3	7.9
82.5°	7.4	7.4	7.0	7.1	7.0	6.5
83°	6.6	6.6	6.2	6.2	5.9	5.4
83.5°	5.7	5.7	5.4	5.4	5.0	4.4
84°	4.9	5.0	4.7	4.6	4.1	3.6
84.5°	4.1	4.2	4.0	3.9	3.5	3.1
85°	3.3	3.5	3.4	3.3	2.8	2.7
85.5°	2.4	2.9	2.7	2.7	2.1	2.1
86°	1.7	2.1	2.0	2.0	1.5	1.7
86.5°	1.0	1.4	1.3	1.4	1.1	1.4
87°	0.5	0.7	0.8	1.0	0.8	1.2
87.5°	0.1	0.2	0.3	0.5	0.5	0.9
88°	0.0	0.0	0.0	0.1	0.3	0.7
88.5°	0.0	0.0	0.0	0.0	0.1	0.5



TEST NUMBER: P775651

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-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°	604.0	611.9	596.2	562.8	517.6	478.5	446.3	422.8	403.2	399.7	406.9
22°	599.1	607.8	592.2	558.4	512.8	473.5	441.1	417.5	397.8	394.3	401.3



44°	274.0	281.4	276.5	259.8	233.4	213.0	197.4	186.5	172.7	169.9	169.0
44.5°	267.9	275.1	270.3	253.9	227.7	207.8	192.6	181.9	168.4	166.1	164.9



66.5°	81.6	84.2	79.6	71.2	62.0	57.3	57.3	57.5	53.8	51.9	49.2
67°	78.4	81.0	76.8	68.6	59.8	55.4	55.5	55.6	51.8	50.2	47.5



89°	0.3	0.6	1.6	2.3	2.1	2.1	1.6	0.7	0.0	0.1	0.0
89.5°	0.1	0.4	1.0	1.7	1.5	1.4	0.9	0.3	0.0	0.1	0.0

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21.5°	423.1	452.3	488.0	530.2	570.3	604.0
22°	417.3	446.5	482.1	524.4	564.6	599.1



44°	172.1	184.3	202.3	226.5	250.3	274.0
44.5°	167.9	179.8	197.5	221.2	244.7	267.9

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66.5°	45.8	46.8	51.4	60.3	71.0	81.6
67°	44.3	45.0	49.4	57.9	68.2	78.4

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89°	0.0	0.0	0.0	0.0	0.1	0.3
89.5°	0.0	0.0	0.0	0.0	0.0	0.1

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(END OF REPORT)