

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: P775653

Luminaire Tested: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775653
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-4000K
Description: 4 INCH ROUND NARROW LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

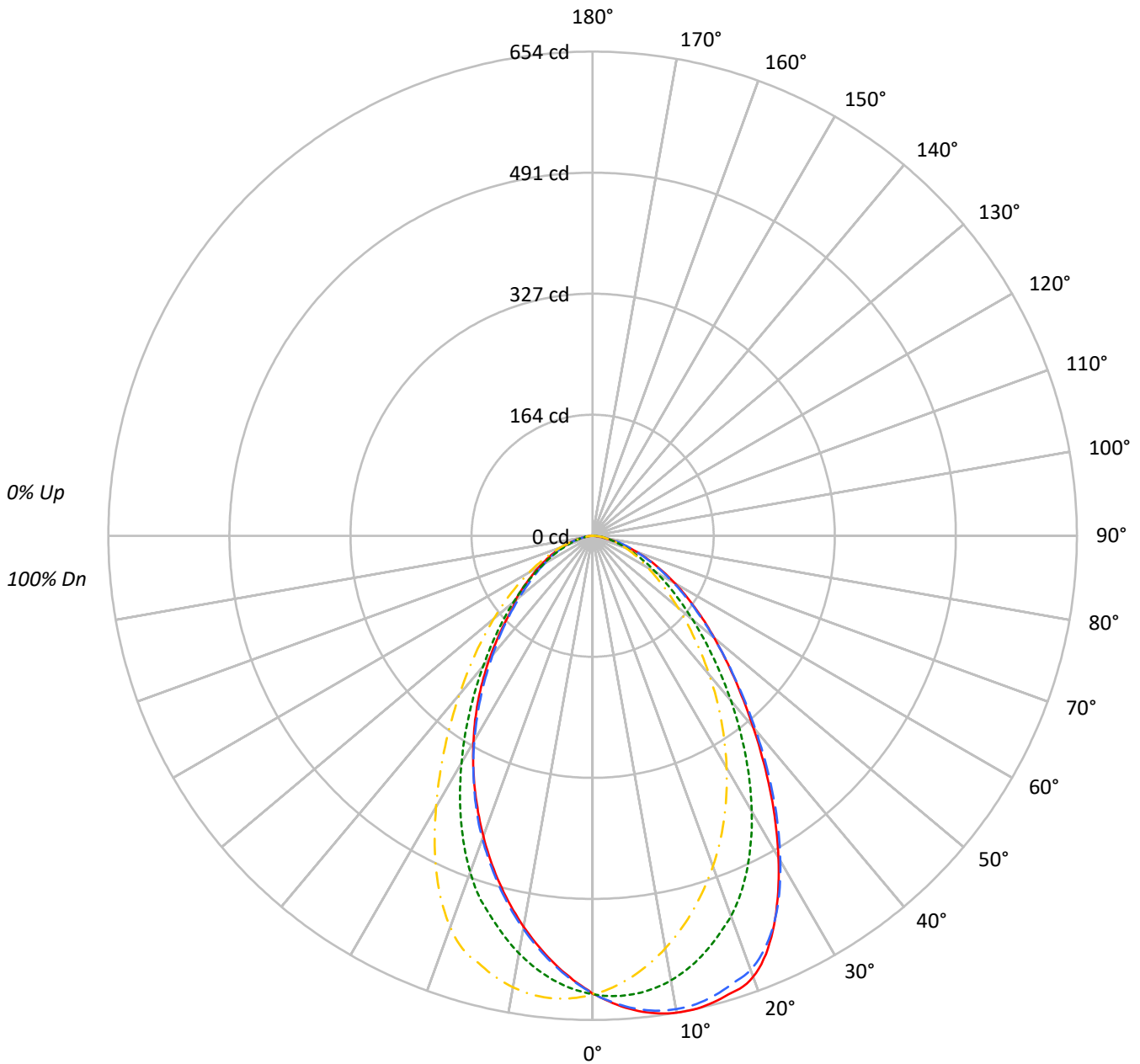
Lumens per Lamp: N/A
Luminaire Lumens: 1027.7 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Spacing Criteria (0/90/45): 1.05 / 1.01 / 1.07
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 10
Input Voltage (V): NR
Input Current (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	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°	77876	77876	77876	77876
5°	81231	78552	73398	76127
10°	83601	77914	68522	73173
15°	84688	75998	63295	69327
20°	84923	73218	57803	64753
25°	80497	68680	52281	58474
30°	72965	62429	46822	51486
35°	64112	55232	41235	44400
40°	55397	47725	35551	37802
45°	48001	40668	30043	32161
50°	41977	34517	26529	27371
55°	36883	29357	23565	23148
60°	32268	24943	20765	19406
65°	27962	21202	18284	16140
70°	22850	17883	15454	13283
75°	17116	15171	12497	11038
80°	10291	13263	8914	8769
85°	3899	12274	3177	5198

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°

Vertical Angle: 45°

Luminance: 49264 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.9	5.6
10°-20°	158.2	15.4
20°-30°	214.3	20.9
30°-40°	208.3	20.3
40°-50°	164.9	16.0
50°-60°	115.5	11.2
60°-70°	70.0	6.8
70°-80°	32.1	3.1
80°-90°	6.5	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°	430.4	41.9
0°-40°	638.7	62.1
0°-60°	919.1	89.4
0°-90°	1027.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1027.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	619	619	619	619	619	
5°	643	622	581	603	643	62
15°	650	583	486	532	650	184
25°	580	495	376	421	580	265
35°	417	360	268	289	417	260
45°	270	228	169	181	270	209
55°	168	134	107	106	168	151
65°	94	71	61	54	94	93
75°	35	31	26	23	35	38
85°	3	8	2	4	3	5
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°	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8	618.8
0.5°	620.7	621.0	620.8	620.5	620.2	619.0	618.2	617.9	614.4	614.3	614.9
1°	623.7	624.1	623.8	622.5	620.9	618.5	616.5	615.2	611.1	611.1	611.9
1.5°	626.5	627.0	626.2	624.2	621.6	618.0	614.7	612.5	607.6	607.4	608.6
2°	629.2	630.0	628.6	626.0	622.0	617.1	612.8	609.6	604.1	603.7	605.2
2.5°	631.9	632.8	631.0	627.5	622.4	616.3	610.7	606.8	600.5	600.0	601.7
3°	634.4	635.3	633.3	628.9	622.5	615.2	608.5	603.5	596.7	596.3	598.2
3.5°	636.8	637.8	635.3	630.2	622.6	614.0	606.2	600.5	592.9	592.3	594.6
4°	639.0	640.1	637.3	631.2	622.4	612.6	603.8	597.1	589.1	588.3	590.9
4.5°	641.1	642.4	639.1	632.2	622.2	611.3	601.3	593.6	585.0	584.2	587.0
5°	643.0	644.6	640.8	633.0	621.8	609.6	598.6	590.2	581.0	580.0	583.2
5.5°	644.8	646.6	642.4	633.6	621.2	607.9	595.8	586.6	576.7	575.7	579.0
6°	646.4	648.3	643.7	634.3	620.5	605.9	592.8	582.8	572.6	571.3	575.0
6.5°	647.9	650.0	645.0	634.7	619.7	604.0	589.8	579.0	568.3	567.0	570.7
7°	649.3	651.5	646.0	634.9	618.7	601.8	586.7	575.2	563.9	562.4	566.3
7.5°	650.5	652.9	647.0	634.9	617.5	599.6	583.5	571.3	559.5	557.8	562.0
8°	651.5	654.0	647.8	634.9	616.2	597.2	580.2	567.2	555.0	553.1	557.6
8.5°	652.4	655.1	648.4	634.7	614.8	594.8	576.7	563.0	550.4	548.6	553.2
9°	653.2	656.0	649.0	634.3	613.3	592.1	573.1	558.9	545.7	543.7	548.6
9.5°	653.8	656.7	649.2	633.6	611.6	589.3	569.6	554.6	540.9	538.9	543.9
10°	654.2	657.3	649.4	632.9	609.7	586.4	565.9	550.4	536.2	534.1	539.1
10.5°	654.4	657.7	649.3	632.1	607.7	583.4	562.0	545.8	531.4	529.1	534.4
11°	654.5	657.9	649.2	631.1	605.5	580.3	558.0	541.3	526.5	524.2	529.6
11.5°	654.5	658.0	648.9	629.9	603.2	577.1	554.1	536.8	521.6	519.2	524.6
12°	654.3	658.0	648.3	628.6	600.8	573.8	550.0	532.3	516.7	514.1	519.6
12.5°	654.0	657.8	647.7	627.1	598.1	570.2	545.8	527.6	511.6	508.9	514.7
13°	653.5	657.4	646.9	625.5	595.5	566.7	541.6	522.8	506.6	503.8	509.7
13.5°	652.7	656.9	646.0	623.8	592.7	563.2	537.3	518.0	501.4	498.6	504.6
14°	652.0	656.1	644.9	621.7	589.7	559.3	532.8	513.2	496.3	493.2	499.4
14.5°	651.1	655.3	643.6	619.6	586.6	555.4	528.3	508.3	491.0	488.1	494.2
15°	650.0	654.3	642.1	617.4	583.3	551.3	523.8	503.3	485.8	482.6	488.9
15.5°	648.7	653.1	640.6	615.0	580.1	547.3	519.2	498.3	480.5	477.4	483.6
16°	647.2	651.8	638.8	612.5	576.5	543.1	514.3	493.2	475.3	472.0	478.3
16.5°	646.0	650.3	636.9	609.9	572.9	538.9	509.6	488.1	469.9	466.7	473.0
17°	645.1	649.0	635.0	607.2	569.2	534.5	504.9	483.0	464.6	461.0	467.7
17.5°	644.2	648.0	633.0	604.1	565.5	530.1	500.0	477.8	459.1	455.5	462.4
18°	643.4	647.2	631.4	601.4	561.7	525.6	494.9	472.5	453.6	450.1	456.9
18.5°	641.8	646.2	630.0	598.7	558.0	521.2	490.0	467.3	448.2	444.6	451.5
19°	639.8	644.9	628.5	596.1	554.4	516.7	484.9	462.0	442.7	439.2	446.4
19.5°	637.1	642.8	626.6	593.5	550.7	512.2	480.1	456.8	437.2	433.7	441.0
20°	634.1	640.3	624.1	590.6	546.7	507.5	474.9	451.5	431.6	428.1	435.6
20.5°	630.6	637.2	621.0	587.1	542.3	502.9	469.9	446.1	426.0	422.6	430.0
21°	626.5	633.8	617.5	583.5	537.6	497.8	464.6	440.6	420.7	417.1	424.3



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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°	611.6	621.0	605.3	570.1	522.8	482.1	448.7	424.3	404.0	400.5	407.4
23°	605.7	615.9	600.7	565.4	517.4	476.6	443.1	418.8	398.4	395.1	401.7
23.5°	599.6	610.5	595.6	560.3	512.0	471.2	437.7	413.3	393.1	389.5	395.8
24°	593.3	604.8	590.5	555.0	506.4	465.3	432.0	407.9	387.5	384.0	390.0
24.5°	586.6	598.6	584.8	549.3	500.6	459.5	426.3	402.2	381.9	378.5	384.2
25°	579.7	592.1	578.9	543.5	494.6	453.6	420.5	396.6	376.5	373.0	378.5
25.5°	572.6	585.2	572.6	537.7	488.6	447.7	414.8	391.1	371.0	367.3	372.5
26°	565.4	578.3	566.2	531.5	482.5	441.7	409.1	385.5	365.6	361.7	366.6
26.5°	557.8	571.3	559.6	525.3	476.2	435.5	403.2	379.8	360.1	356.2	360.7
27°	550.4	563.8	552.7	518.8	469.7	429.3	397.4	374.2	354.7	350.6	354.8
27.5°	542.7	556.2	545.5	512.1	463.3	423.2	391.4	368.6	349.2	345.1	348.8
28°	534.6	548.4	538.0	505.2	456.7	417.1	385.5	363.0	343.8	339.5	342.9
28.5°	526.6	540.4	530.2	498.3	450.2	410.7	379.6	357.2	338.5	333.9	337.0
29°	518.5	532.4	522.6	491.2	443.4	404.3	373.6	351.6	333.1	328.4	331.1
29.5°	510.2	524.3	515.0	483.9	436.5	398.1	367.7	346.0	327.6	322.9	325.2
30°	502.1	515.9	507.0	476.7	429.6	391.7	361.7	340.4	322.2	317.3	319.2
30.5°	493.7	507.6	498.8	469.3	422.7	385.2	355.7	334.8	316.7	311.9	313.5
31°	485.2	499.1	490.6	461.6	415.9	378.9	349.8	329.1	311.4	306.3	307.7
31.5°	476.9	490.5	482.4	454.1	408.8	372.4	343.8	323.5	306.0	300.8	302.0
32°	468.2	481.8	474.0	446.2	401.8	366.1	337.9	318.0	300.6	295.4	296.2
32.5°	459.6	473.1	465.6	438.4	394.7	359.7	331.8	312.4	295.2	289.9	290.4
33°	451.1	464.5	457.3	430.6	387.6	353.2	326.0	306.9	289.8	284.5	284.6
33.5°	442.5	455.9	449.2	422.8	380.7	346.7	320.1	301.2	284.5	279.0	279.1
34°	434.1	447.1	440.7	414.8	373.5	340.1	314.2	295.7	279.1	273.6	273.3
34.5°	425.7	438.3	432.2	406.9	366.4	333.7	308.3	290.3	273.7	268.2	267.8
35°	417.3	429.7	423.7	399.0	359.5	327.4	302.3	284.8	268.4	262.9	262.1
35.5°	408.9	421.2	415.3	391.3	352.3	321.0	296.7	279.2	263.2	257.7	256.8
36°	400.4	412.7	407.0	383.5	345.3	314.6	290.9	273.9	257.8	252.4	251.3
36.5°	392.3	404.3	398.7	375.6	338.1	308.2	285.0	268.5	252.6	247.2	245.9
37°	384.0	395.7	390.4	368.1	331.4	302.1	279.1	263.2	247.2	241.9	240.6
37.5°	376.0	387.3	382.3	360.4	324.3	295.7	273.3	257.8	242.2	236.9	235.3
38°	368.0	379.1	373.9	352.5	317.6	289.5	267.8	252.7	236.9	231.8	230.1
38.5°	360.2	370.9	366.0	345.2	310.7	283.3	261.9	247.3	231.8	226.6	225.1
39°	352.4	362.8	357.9	337.5	304.0	277.3	256.2	242.2	226.7	221.6	220.0
39.5°	344.9	354.9	350.3	330.4	297.1	271.1	250.6	236.9	221.6	216.6	215.0
40°	337.2	347.2	342.4	322.7	290.5	265.0	245.1	231.8	216.4	211.6	210.0
40.5°	329.9	339.6	334.8	315.8	283.9	258.9	239.5	226.4	211.5	206.7	205.3
41°	322.7	331.8	327.2	308.5	277.3	253.2	234.2	221.4	206.6	201.8	200.5
41.5°	315.5	324.7	319.9	301.4	270.8	247.1	228.8	216.2	201.6	197.0	195.8
42°	308.5	317.3	312.5	294.2	264.6	241.3	223.6	211.4	196.7	192.4	191.4
42.5°	301.8	310.2	305.5	287.7	258.4	235.7	218.3	206.3	192.0	187.9	187.0
43°	295.1	303.4	298.5	281.0	252.2	230.2	213.3	201.5	187.1	183.3	182.5
43.5°	288.6	296.6	291.5	274.4	246.1	224.6	208.1	196.6	182.4	179.0	178.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	269.7	276.8	271.7	255.1	228.5	208.8	193.4	182.8	168.8	166.8	165.6
45.5°	263.6	270.6	265.3	248.9	222.8	203.6	188.8	178.5	164.3	162.9	161.6
46°	257.7	264.5	259.1	242.9	217.3	198.7	184.2	174.2	160.1	158.9	157.6
46.5°	251.9	258.4	252.9	236.9	211.8	193.6	179.8	169.9	156.0	155.0	153.6
47°	246.3	252.4	247.0	231.0	206.3	188.7	175.3	165.7	152.2	151.3	149.7
47.5°	240.8	246.7	241.0	225.4	201.1	184.0	170.9	161.6	148.5	147.8	146.0
48°	235.2	240.9	235.1	219.5	195.8	179.1	166.5	157.6	145.2	144.2	142.4
48.5°	229.8	235.4	229.6	214.1	190.8	174.6	162.2	153.6	142.4	140.7	138.7
49°	224.6	230.0	224.0	208.8	185.9	170.1	158.1	149.9	139.9	137.4	135.3
49.5°	219.5	224.6	218.6	203.5	181.0	165.7	153.9	146.1	137.6	134.2	131.8
50°	214.4	219.5	213.4	198.3	176.3	161.4	150.0	142.4	135.5	131.3	128.4
50.5°	209.5	214.2	208.0	193.1	171.6	157.1	146.1	138.8	133.4	128.3	125.0
51°	204.6	209.2	202.9	188.2	167.0	153.0	142.2	135.4	130.9	125.7	121.8
51.5°	199.7	204.2	197.9	183.3	162.7	149.0	138.5	132.0	128.1	123.3	118.8
52°	195.0	199.3	193.0	178.4	158.3	145.0	134.7	128.7	125.0	120.4	115.6
52.5°	190.4	194.5	188.2	173.8	153.9	141.1	131.2	125.6	121.9	117.6	112.6
53°	185.9	189.9	183.3	169.3	149.7	137.2	127.6	122.7	119.0	114.8	109.6
53.5°	181.2	185.1	178.7	164.7	145.7	133.5	124.1	119.6	115.9	111.9	106.7
54°	176.8	180.6	174.1	160.2	141.7	129.8	120.8	116.9	113.0	109.2	103.9
54.5°	172.4	176.0	169.5	155.9	137.6	126.2	117.4	114.4	110.3	106.5	101.1
55°	168.1	171.7	165.3	151.6	133.8	122.8	114.3	111.7	107.4	104.0	98.5
55.5°	163.8	167.3	160.9	147.5	130.0	119.2	111.1	109.1	104.8	101.1	95.9
56°	159.6	163.0	156.6	143.3	126.3	115.7	108.0	106.4	102.1	98.5	93.4
56.5°	155.5	158.8	152.4	139.3	122.8	112.5	104.9	103.8	99.4	96.1	91.0
57°	151.5	154.7	148.3	135.5	119.1	109.1	102.0	101.1	96.8	93.7	88.7
57.5°	147.3	150.5	144.3	131.6	115.6	106.0	99.1	98.6	94.4	91.1	86.5
58°	143.4	146.4	140.2	127.8	112.2	102.8	96.4	96.1	91.9	88.8	84.2
58.5°	139.6	142.4	136.3	124.0	109.0	99.8	93.7	93.6	89.6	86.5	82.0
59°	135.7	138.6	132.5	120.3	105.6	96.7	91.0	91.1	87.2	84.2	79.7
59.5°	131.9	134.5	128.6	116.8	102.4	93.8	88.6	88.8	84.8	81.9	77.6
60°	128.2	130.9	125.0	113.3	99.1	90.9	86.2	86.5	82.5	79.6	75.5
60.5°	124.5	127.2	121.3	109.7	96.2	88.3	83.8	84.2	80.2	77.4	73.4
61°	120.9	123.5	117.7	106.5	93.1	85.6	81.4	81.9	78.0	75.3	71.3
61.5°	117.3	119.7	114.0	103.1	90.3	82.9	79.0	79.6	75.8	73.1	69.3
62°	113.8	116.4	110.7	99.9	87.5	80.1	76.9	77.4	73.7	71.0	67.3
62.5°	110.5	112.8	107.3	96.7	84.6	77.5	74.7	75.3	71.5	68.9	65.3
63°	107.0	109.3	103.9	93.6	81.8	75.0	72.6	73.1	69.5	67.0	63.3
63.5°	103.6	105.9	100.6	90.5	79.0	72.6	70.5	71.0	67.4	64.9	61.4
64°	100.4	102.5	97.3	87.5	76.2	70.1	68.6	68.9	65.4	63.0	59.5
64.5°	97.1	99.2	94.2	84.5	73.7	67.8	66.6	66.9	63.4	61.0	57.8
65°	93.9	96.1	91.0	81.6	71.2	65.5	64.7	65.0	61.4	59.1	55.9
65.5°	90.6	92.7	87.9	78.9	68.7	63.3	62.7	63.0	59.3	57.2	54.1
66°	87.3	89.7	85.0	76.1	66.3	61.1	60.9	61.0	57.3	55.3	52.4



TEST NUMBER: P775653

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	77.6	80.3	76.1	68.0	59.3	55.0	55.3	55.3	51.4	49.8	47.3
68°	74.5	77.3	73.3	65.5	57.1	53.0	53.7	53.5	49.5	48.0	45.6
68.5°	71.2	74.2	70.6	63.1	54.9	51.1	51.9	51.6	47.6	46.1	44.0
69°	68.2	71.2	67.9	60.6	52.8	49.3	50.2	49.8	45.7	44.4	42.4
69.5°	65.1	68.3	65.3	58.3	50.7	47.6	48.4	47.9	43.8	42.6	40.8
70°	62.1	65.3	62.7	55.9	48.6	45.8	46.8	46.1	42.0	41.0	39.3
70.5°	59.2	62.5	60.2	53.6	46.6	44.1	45.2	44.4	40.3	39.3	37.8
71°	56.3	59.8	57.7	51.4	44.7	42.5	43.6	42.6	38.5	37.5	36.2
71.5°	53.5	56.9	55.2	49.1	42.8	41.0	42.0	41.0	36.9	35.9	34.8
72°	50.6	54.3	52.9	47.0	41.1	39.4	40.4	39.3	35.2	34.3	33.3
72.5°	48.0	51.8	50.5	45.0	39.3	37.9	39.0	37.6	33.5	32.7	31.8
73°	45.4	49.1	48.2	43.1	37.6	36.3	37.4	36.0	31.8	31.2	30.5
73.5°	42.6	46.7	46.0	41.0	35.9	35.0	35.9	34.3	30.2	29.6	29.1
74°	40.1	44.2	43.7	39.1	34.3	33.6	34.4	32.9	28.7	28.0	27.7
74.5°	37.5	41.8	41.6	37.7	32.8	32.2	33.1	31.3	27.2	26.6	26.3
75°	35.2	39.5	39.5	35.9	31.2	30.9	31.6	29.8	25.7	25.1	25.0
75.5°	32.9	37.2	37.3	34.1	29.7	29.6	30.2	28.4	24.3	23.7	23.6
76°	30.6	35.2	35.4	32.2	28.4	28.4	28.9	26.9	22.8	22.3	22.4
76.5°	28.2	33.1	33.5	30.5	26.9	27.1	27.5	25.4	21.3	20.9	21.1
77°	26.0	31.0	31.7	28.8	25.6	25.8	26.1	24.0	20.0	19.5	19.8
77.5°	23.8	28.9	29.8	27.2	24.3	24.7	24.8	22.7	18.6	18.3	18.7
78°	21.7	26.9	27.9	25.7	23.0	23.5	23.6	21.3	17.3	16.9	17.5
78.5°	19.7	25.1	26.1	24.3	21.7	22.3	22.3	20.0	16.0	15.6	16.3
79°	17.7	23.2	24.5	22.8	20.5	21.1	21.1	18.6	14.7	14.4	15.1
79.5°	16.0	21.4	22.8	21.3	19.3	20.1	19.8	17.3	13.4	13.2	14.1
80°	14.2	19.6	21.1	20.0	18.3	18.9	18.7	16.1	12.3	12.0	12.9
80.5°	12.6	18.1	19.5	18.7	17.1	17.9	17.5	14.9	11.0	10.8	11.9
81°	11.0	16.5	18.1	17.4	16.1	16.8	16.4	13.7	10.0	9.8	10.8
81.5°	9.6	15.0	16.6	16.2	15.0	15.8	15.2	12.5	8.8	8.7	9.9
82°	8.1	13.5	15.1	15.0	14.0	14.7	14.2	11.3	7.8	7.7	8.9
82.5°	6.7	12.1	13.8	13.9	13.0	13.7	13.0	10.3	6.6	6.6	8.0
83°	5.6	10.7	12.5	12.7	12.1	12.7	12.0	9.2	5.5	5.6	7.0
83.5°	4.5	9.5	11.2	11.7	11.1	11.8	11.0	8.2	4.5	4.7	6.1
84°	3.7	8.1	10.1	10.6	10.2	10.7	10.1	7.1	3.6	4.0	5.3
84.5°	3.2	6.9	8.9	9.7	9.3	9.9	9.1	6.1	2.7	3.4	4.5
85°	2.7	5.8	7.9	8.7	8.5	8.9	8.3	5.3	2.2	2.8	3.7
85.5°	2.2	4.7	6.9	7.8	7.7	8.1	7.4	4.5	1.9	2.3	2.9
86°	1.8	3.8	6.0	6.9	6.8	7.1	6.4	3.9	1.6	1.9	2.1
86.5°	1.5	3.2	5.1	6.0	6.0	6.2	5.6	3.4	1.3	1.4	1.5
87°	1.3	2.5	4.3	5.3	5.3	5.4	4.7	2.7	0.9	0.9	0.8
87.5°	0.9	1.9	3.7	4.5	4.5	4.5	3.9	2.2	0.6	0.5	0.3
88°	0.7	1.3	3.0	3.8	3.7	3.8	3.2	1.7	0.4	0.2	0.1
88.5°	0.5	0.8	2.3	3.0	2.9	2.9	2.4	1.2	0.1	0.1	0.0



TEST NUMBER: P775653

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-4000K

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	1.2	0.9	0.8	0.4	0.1	0.0	0.1	0.0



TEST NUMBER: P775653

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	618.8	618.8	618.8	618.8	618.8	618.8
0.5°	616.0	618.3	619.5	621.1	622.7	620.7
1°	613.7	617.0	619.6	622.3	624.9	623.7
1.5°	611.2	615.7	619.5	623.4	627.0	626.5
2°	608.6	614.3	619.1	624.4	629.0	629.2
2.5°	605.9	612.6	618.8	625.2	630.9	631.9
3°	603.1	611.0	618.2	625.9	632.6	634.4
3.5°	600.0	609.1	617.6	626.5	634.2	636.8
4°	597.0	607.1	616.6	626.8	635.4	639.0
4.5°	593.8	604.9	615.7	627.0	636.7	641.1
5°	590.5	602.6	614.5	627.1	637.9	643.0
5.5°	587.0	600.2	613.2	627.0	638.9	644.8
6°	583.5	597.6	611.8	626.8	639.6	646.4
6.5°	580.0	594.9	610.2	626.4	640.3	647.9
7°	576.1	592.1	608.4	625.8	640.8	649.3
7.5°	572.3	589.1	606.5	625.0	641.2	650.5
8°	568.4	586.2	604.5	624.2	641.3	651.5
8.5°	564.3	582.9	602.3	623.2	641.3	652.4
9°	560.2	579.6	600.0	622.1	641.2	653.2
9.5°	555.9	576.1	597.6	620.7	641.0	653.8
10°	551.6	572.6	595.1	619.2	640.6	654.2
10.5°	547.2	568.9	592.5	617.7	640.0	654.4
11°	542.8	565.3	589.5	615.9	639.3	654.5
11.5°	538.3	561.4	586.5	614.0	638.4	654.5
12°	533.7	557.3	583.5	612.0	637.3	654.3
12.5°	529.0	553.3	580.4	609.8	636.2	654.0
13°	524.3	549.2	577.0	607.5	634.9	653.5
13.5°	519.4	545.0	573.6	605.2	633.4	652.7
14°	514.4	540.6	570.0	602.4	631.7	652.0
14.5°	509.5	536.4	566.6	599.8	630.2	651.1
15°	504.8	532.1	563.1	597.3	628.2	650.0
15.5°	499.9	527.9	559.8	595.1	626.6	648.7
16°	495.0	523.6	556.6	593.1	625.3	647.2
16.5°	490.1	519.4	553.3	590.8	624.1	646.0
17°	485.2	515.1	549.5	588.1	622.6	645.1
17.5°	480.1	510.5	545.2	584.6	620.6	644.2
18°	475.1	505.5	540.6	580.9	617.8	643.4
18.5°	469.8	500.4	535.7	576.7	614.4	641.8
19°	464.4	494.8	530.5	572.3	610.6	639.8
19.5°	458.8	489.2	525.3	567.5	606.8	637.1
20°	453.1	483.5	519.9	562.4	602.2	634.1
20.5°	447.2	477.8	514.1	557.2	597.6	630.6
21°	441.5	471.7	508.3	551.5	592.5	626.5



TEST NUMBER: P775653

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	423.4	453.3	490.1	533.6	575.2	611.6
23°	417.3	447.0	483.7	527.3	568.8	605.7
23.5°	411.0	440.6	477.1	520.5	562.2	599.6
24°	404.8	434.1	470.6	513.8	555.2	593.3
24.5°	398.5	427.6	463.7	506.7	548.2	586.6
25°	392.3	421.1	456.9	499.5	540.7	579.7
25.5°	386.0	414.6	449.9	492.3	533.4	572.6
26°	379.7	408.0	442.8	484.8	525.7	565.4
26.5°	373.5	401.2	436.0	477.4	518.1	557.8
27°	367.2	394.5	428.8	469.7	510.4	550.4
27.5°	360.9	387.8	421.6	462.0	502.3	542.7
28°	354.6	381.1	414.2	454.2	494.2	534.6
28.5°	348.4	374.3	407.0	446.4	486.3	526.6
29°	342.1	367.7	399.9	438.6	478.3	518.5
29.5°	335.8	361.0	392.5	430.6	470.1	510.2
30°	329.6	354.3	385.2	423.2	461.9	502.1
30.5°	323.4	347.6	377.8	415.3	453.8	493.7
31°	317.2	341.1	370.6	407.4	445.8	485.2
31.5°	311.1	334.4	363.4	399.8	437.7	476.9
32°	304.8	327.7	356.2	392.1	429.4	468.2
32.5°	299.0	321.2	349.1	384.3	421.3	459.6
33°	292.9	314.6	341.9	377.1	413.2	451.1
33.5°	286.8	308.1	335.0	369.5	405.1	442.5
34°	280.9	301.7	327.9	362.1	397.5	434.1
34.5°	275.0	295.3	321.1	354.7	389.4	425.7
35°	269.1	289.0	314.3	347.5	381.6	417.3
35.5°	263.4	282.6	307.5	340.2	373.8	408.9
36°	257.7	276.6	301.1	333.4	366.3	400.4
36.5°	252.0	270.4	294.5	326.1	358.8	392.3
37°	246.4	264.4	288.3	319.3	351.2	384.0
37.5°	241.0	258.3	281.7	312.5	343.8	376.0
38°	235.5	252.6	275.5	305.9	336.5	368.0
38.5°	230.3	246.8	269.4	299.1	329.2	360.2
39°	225.1	241.1	263.4	292.8	322.4	352.4
39.5°	219.8	235.4	257.5	286.4	315.3	344.9
40°	214.6	230.1	251.5	280.1	308.4	337.2
40.5°	209.7	224.6	245.8	273.7	301.7	329.9
41°	204.8	219.5	240.2	267.7	295.1	322.7
41.5°	199.8	214.2	234.7	261.6	288.6	315.5
42°	195.2	209.2	229.2	255.8	282.2	308.5
42.5°	190.5	204.1	223.8	250.0	275.9	301.8
43°	186.0	199.4	218.5	244.4	269.7	295.1
43.5°	181.5	194.5	213.3	238.7	263.7	288.6



TEST NUMBER: P775653

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	168.6	180.7	198.3	222.5	246.3	269.7
45.5°	164.6	176.2	193.5	217.3	240.7	263.6
46°	160.5	171.9	188.7	212.1	235.2	257.7
46.5°	156.5	167.6	184.2	207.1	229.8	251.9
47°	152.5	163.4	179.5	202.0	224.5	246.3
47.5°	148.7	159.3	175.1	197.2	219.3	240.8
48°	144.9	155.3	170.6	192.4	214.2	235.2
48.5°	141.2	151.3	166.2	187.7	209.2	229.8
49°	137.5	147.4	162.0	183.1	204.4	224.6
49.5°	133.9	143.5	157.8	178.6	199.5	219.5
50°	130.4	139.8	153.6	174.0	194.7	214.4
50.5°	127.0	136.1	149.6	169.6	190.1	209.5
51°	123.6	132.4	145.7	165.4	185.4	204.6
51.5°	120.2	128.7	141.8	161.1	181.0	199.7
52°	116.9	125.4	137.9	157.0	176.4	195.0
52.5°	113.6	121.9	134.2	152.9	172.1	190.4
53°	110.5	118.6	130.4	148.8	167.8	185.9
53.5°	107.3	115.2	126.9	144.9	163.5	181.2
54°	104.3	111.8	123.3	140.9	159.3	176.8
54.5°	101.3	108.7	119.8	137.0	155.3	172.4
55°	98.4	105.5	116.4	133.3	151.1	168.1
55.5°	95.5	102.5	113.0	129.6	147.2	163.8
56°	92.7	99.4	109.5	125.9	143.2	159.6
56.5°	90.1	96.5	106.4	122.3	139.3	155.5
57°	87.5	93.5	103.1	118.8	135.5	151.5
57.5°	84.8	90.7	100.0	115.3	131.7	147.3
58°	82.2	87.8	96.9	111.8	127.9	143.4
58.5°	79.6	85.1	94.0	108.6	124.3	139.6
59°	77.2	82.3	90.9	105.2	120.7	135.7
59.5°	74.8	79.7	88.1	102.0	117.2	131.9
60°	72.6	77.1	85.2	98.8	113.6	128.2
60.5°	70.3	74.6	82.4	95.7	110.3	124.5
61°	68.0	72.1	79.6	92.6	106.7	120.9
61.5°	65.8	69.6	77.0	89.6	103.5	117.3
62°	63.7	67.2	74.3	86.5	100.3	113.8
62.5°	61.6	64.9	71.7	83.7	97.0	110.5
63°	59.6	62.7	69.2	80.8	93.8	107.0
63.5°	57.7	60.5	66.8	78.0	90.7	103.6
64°	55.8	58.3	64.3	75.2	87.7	100.4
64.5°	54.0	56.2	62.0	72.5	84.6	97.1
65°	52.2	54.2	59.6	69.8	81.7	93.9
65.5°	50.5	52.1	57.4	67.2	78.9	90.6
66°	48.8	50.1	55.1	64.6	76.0	87.3



TEST NUMBER: P775653

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	44.0	44.5	48.7	57.2	67.4	77.6
68°	42.5	42.7	46.7	54.9	64.7	74.5
68.5°	41.0	41.1	44.8	52.6	62.0	71.2
69°	39.5	39.4	42.9	50.3	59.2	68.2
69.5°	38.0	37.6	41.0	48.2	56.6	65.1
70°	36.5	36.1	39.2	46.1	54.1	62.1
70.5°	35.2	34.8	37.5	44.0	51.6	59.2
71°	33.8	33.3	35.9	41.9	49.0	56.3
71.5°	32.3	31.8	34.2	39.9	46.6	53.5
72°	31.1	30.5	32.6	38.0	44.2	50.6
72.5°	29.8	29.1	30.9	36.1	41.9	48.0
73°	28.4	27.7	29.4	34.3	39.7	45.4
73.5°	27.1	26.5	27.8	32.4	37.3	42.6
74°	25.8	25.2	26.4	30.7	35.3	40.1
74.5°	24.7	23.9	25.0	28.9	33.3	37.5
75°	23.4	22.7	23.6	27.2	31.3	35.2
75.5°	22.3	21.5	22.3	25.5	29.3	32.9
76°	21.1	20.4	21.0	23.8	27.4	30.6
76.5°	20.0	19.2	19.6	22.4	25.5	28.2
77°	18.8	18.2	18.5	20.8	23.7	26.0
77.5°	17.7	17.1	17.2	19.3	21.9	23.8
78°	16.6	16.1	16.1	18.0	20.3	21.7
78.5°	15.5	15.0	15.0	16.5	18.6	19.7
79°	14.5	14.1	14.0	15.2	17.0	17.7
79.5°	13.4	13.0	12.8	13.9	15.4	16.0
80°	12.4	12.1	11.9	12.7	14.0	14.2
80.5°	11.4	11.2	10.8	11.6	12.5	12.6
81°	10.5	10.3	10.0	10.4	11.1	11.0
81.5°	9.6	9.3	9.0	9.2	9.8	9.6
82°	8.6	8.5	8.1	8.3	8.5	8.1
82.5°	7.7	7.7	7.2	7.4	7.2	6.7
83°	6.8	6.8	6.4	6.4	6.1	5.6
83.5°	5.9	5.9	5.6	5.6	5.1	4.5
84°	5.0	5.1	4.8	4.7	4.2	3.7
84.5°	4.2	4.3	4.1	4.0	3.6	3.2
85°	3.4	3.6	3.5	3.4	2.8	2.7
85.5°	2.5	2.9	2.7	2.7	2.2	2.2
86°	1.8	2.2	2.1	2.1	1.6	1.8
86.5°	1.1	1.5	1.4	1.5	1.2	1.5
87°	0.5	0.7	0.8	1.1	0.8	1.3
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: P775653

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-4000K

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°	621.8	630.0	613.8	579.3	532.8	492.6	459.4	435.3	415.1	411.4	418.9
22°	616.7	625.8	609.7	574.8	527.9	487.5	454.1	429.8	409.5	406.0	413.1



44°	282.1	289.7	284.7	267.5	240.3	219.3	203.2	192.0	177.8	174.9	174.0
44.5°	275.8	283.2	278.3	261.4	234.4	213.9	198.3	187.2	173.4	171.0	169.8



66.5°	84.0	86.6	81.9	73.3	63.8	59.0	59.0	59.2	55.3	53.5	50.6
67°	80.8	83.4	79.1	70.7	61.5	57.0	57.1	57.2	53.3	51.7	48.9



89°	0.3	0.6	1.7	2.4	2.2	2.2	1.7	0.7	0.0	0.1	0.0
89.5°	0.1	0.4	1.1	1.8	1.6	1.5	0.9	0.3	0.0	0.1	0.0

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21.5°	435.6	465.6	502.4	545.8	587.1	621.8
22°	429.6	459.6	496.3	539.9	581.2	616.7



44°	177.2	189.8	208.2	233.1	257.7	282.1
44.5°	172.8	185.1	203.3	227.8	251.9	275.8

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66.5°	47.1	48.2	52.9	62.1	73.1	84.0
67°	45.6	46.3	50.8	59.6	70.3	80.8

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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)