

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: P775879

Luminaire Tested: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-5000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P775879
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B022)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-5000K
Description: 8 INCH ROUND MEDIUM LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1068.5 lumens
Efficiency: N/A
Efficacy: 106.8 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.27 / 1.32
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

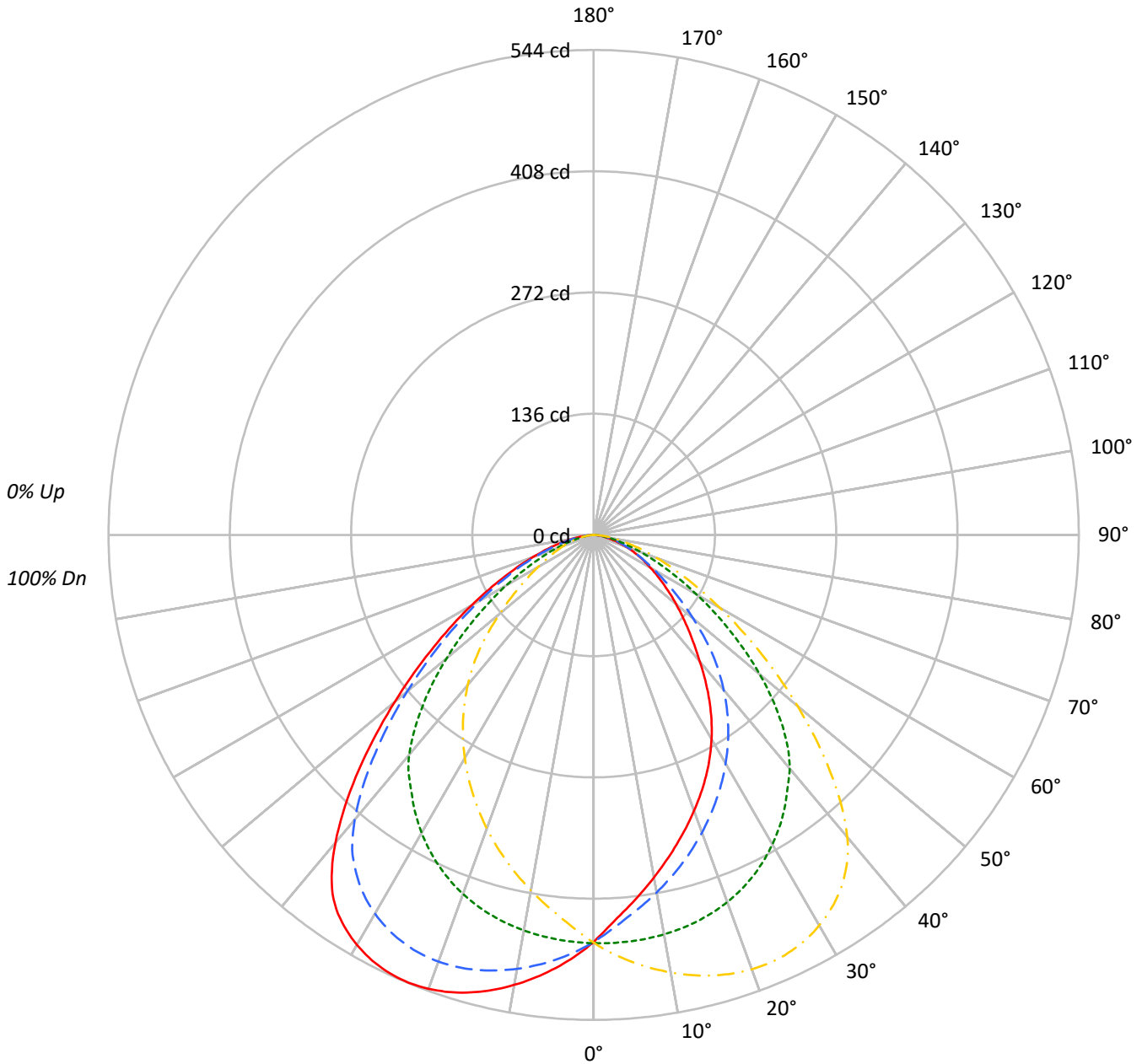
Input Watts (W): 10
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20			
RC	80				70				50				30				10		0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87		
2	102	94	89	83	99	93	87	83	89	85	81	86	82	79	83	80	77	75		
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65		
4	86	75	68	61	84	74	67	61	72	65	60	70	64	59	67	63	59	57		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50		
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44		
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39		
8	64	51	43	38	63	51	43	38	50	43	38	48	42	37	47	41	37	35		
9	60	47	40	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32		
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	13952	13952	13952	13952
5°	12908	14030	14943	13966
10°	12094	14102	15888	13966
15°	11363	14185	16793	13961
20°	10696	14237	17606	13922
25°	10045	14229	18265	13808
30°	9325	14133	18716	13601
35°	8427	13917	18855	13246
40°	7377	13626	17954	12817
45°	6476	12849	16062	11714
50°	5728	11542	13826	10221
55°	5057	9884	11657	8559
60°	4482	8127	9678	6900
65°	3995	6516	7910	5411
70°	3410	5052	6445	4115
75°	2725	3834	5190	3020
80°	2127	2831	4079	2039
85°	1436	2032	2627	1156

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 16338 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.3	4.1
10°-20°	125.6	11.8
20°-30°	192.2	18.0
30°-40°	227.6	21.3
40°-50°	209.0	19.6
50°-60°	146.1	13.7
60°-70°	81.9	7.7
70°-80°	35.4	3.3
80°-90°	7.5	0.7
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°	361.1	33.8
0°-40°	588.7	55.1
0°-60°	943.8	88.3
0°-90°	1068.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1068.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	457	457	457	457	457	
5°	421	458	488	456	421	39
15°	360	449	531	442	360	101
25°	298	422	542	410	298	137
35°	226	373	506	355	226	141
45°	150	298	372	271	150	116
55°	95	186	219	161	95	85
65°	55	90	110	75	55	55
75°	23	32	44	26	23	25
85°	4	6	8	3	4	5
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°	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0
0.5°	452.6	452.9	454.1	455.7	458.1	459.1	460.1	460.1	459.8	459.4	459.1
1°	449.0	449.6	451.5	454.3	458.1	460.5	462.5	463.3	463.4	462.7	461.4
1.5°	445.2	446.1	449.0	452.9	458.2	462.0	465.0	466.5	466.7	465.7	463.7
2°	441.4	442.7	446.3	451.5	458.2	463.3	467.3	469.4	469.9	468.7	466.0
2.5°	437.8	439.3	443.6	450.0	458.2	464.5	469.7	472.3	473.0	471.6	468.2
3°	434.3	436.0	441.1	448.6	458.2	465.9	471.8	475.2	476.1	474.3	470.3
3.5°	430.8	432.9	438.4	447.2	458.1	467.1	474.0	478.0	479.0	477.0	472.2
4°	427.6	429.8	436.0	445.6	458.0	468.3	476.2	480.7	481.9	479.7	474.2
4.5°	424.3	426.8	433.4	444.1	457.9	469.4	478.3	483.5	484.8	482.2	476.2
5°	421.2	423.8	430.9	442.5	457.8	470.6	480.3	486.1	487.6	484.8	478.1
5.5°	418.0	420.8	428.6	440.9	457.7	471.6	482.3	488.7	490.3	487.4	479.9
6°	414.9	417.9	426.1	439.4	457.5	472.6	484.3	491.2	493.0	489.8	481.7
6.5°	411.9	415.1	423.8	437.8	457.3	473.7	486.3	493.8	495.7	492.1	483.4
7°	408.7	412.2	421.5	436.2	457.1	474.7	488.1	496.1	498.2	494.4	485.1
7.5°	405.6	409.3	419.1	434.6	456.8	475.6	490.0	498.5	500.7	496.7	486.7
8°	402.5	406.3	416.8	433.0	456.4	476.5	491.7	500.8	503.2	499.0	488.3
8.5°	399.4	403.4	414.4	431.4	456.1	477.3	493.5	503.1	505.7	501.1	489.9
9°	396.3	400.6	412.0	429.7	455.8	478.2	495.1	505.3	508.0	503.1	491.4
9.5°	393.2	397.7	409.6	428.1	455.4	478.9	496.9	507.4	510.3	505.3	492.8
10°	390.1	394.7	407.2	426.5	454.9	479.8	498.3	509.6	512.5	507.2	494.2
10.5°	387.1	391.8	404.7	424.9	454.5	480.4	499.9	511.6	514.8	509.2	495.6
11°	383.9	388.9	402.3	423.2	454.0	481.1	501.5	513.6	516.9	511.0	496.9
11.5°	380.8	386.0	399.8	421.5	453.4	481.7	502.9	515.5	518.9	512.8	498.1
12°	377.7	383.1	397.2	419.7	452.9	482.3	504.3	517.4	520.8	514.7	499.3
12.5°	374.7	380.2	394.8	417.9	452.4	482.9	505.7	519.4	522.8	516.3	500.4
13°	371.7	377.3	392.3	416.1	451.7	483.4	507.0	521.1	524.7	518.0	501.4
13.5°	368.7	374.4	389.8	414.4	451.0	483.8	508.3	522.7	526.4	519.5	502.5
14°	365.6	371.4	387.2	412.5	450.2	484.2	509.4	524.4	528.1	521.0	503.5
14.5°	362.5	368.6	384.7	410.7	449.5	484.6	510.6	525.9	529.7	522.3	504.3
15°	359.5	365.6	382.1	408.7	448.8	484.9	511.7	527.4	531.3	523.7	505.2
15.5°	356.4	362.6	379.5	406.8	447.9	485.1	512.6	528.7	532.8	524.9	505.9
16°	353.4	359.7	376.9	404.8	447.0	485.3	513.6	530.1	534.2	526.1	506.6
16.5°	350.4	356.8	374.2	402.9	446.1	485.4	514.4	531.3	535.5	527.2	507.2
17°	347.3	353.8	371.7	400.8	445.1	485.5	515.3	532.5	536.6	528.2	507.7
17.5°	344.4	351.0	368.9	398.6	444.1	485.5	516.0	533.5	537.7	529.2	508.2
18°	341.3	348.0	366.2	396.5	443.0	485.5	516.7	534.5	538.8	530.0	508.6
18.5°	338.3	345.1	363.4	394.4	441.8	485.4	517.2	535.5	539.6	530.7	508.9
19°	335.3	342.1	360.8	392.1	440.6	485.3	517.8	536.3	540.5	531.4	509.1
19.5°	332.2	339.2	358.0	390.0	439.5	485.1	518.2	536.9	541.2	531.9	509.2
20°	329.2	336.1	355.2	387.6	438.2	484.8	518.5	537.6	541.9	532.4	509.3
20.5°	326.1	333.2	352.5	385.4	436.9	484.4	518.8	538.1	542.4	532.7	509.2
21°	323.1	330.2	349.6	383.1	435.4	483.9	518.9	538.5	542.8	533.0	509.1



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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°	313.9	321.2	341.2	375.8	431.1	482.3	519.0	539.2	543.5	533.1	508.3
23°	310.8	318.2	338.2	373.3	429.5	481.6	518.8	539.2	543.3	532.9	507.7
23.5°	307.7	315.2	335.4	370.8	427.7	480.9	518.5	539.1	543.2	532.7	507.2
24°	304.6	312.1	332.4	368.2	425.9	480.0	518.2	538.9	543.0	532.3	506.4
24.5°	301.4	308.9	329.5	365.6	424.2	479.0	517.8	538.5	542.6	531.7	505.7
25°	298.2	306.0	326.5	363.0	422.4	478.0	517.1	538.1	542.2	531.2	504.8
25.5°	295.0	302.8	323.7	360.3	420.6	476.9	516.5	537.6	541.6	530.4	503.9
26°	291.8	299.7	320.7	357.7	418.6	475.7	515.7	536.9	540.9	529.6	502.7
26.5°	288.6	296.5	317.7	354.9	416.5	474.3	514.9	536.2	540.0	528.6	501.5
27°	285.2	293.4	314.6	352.1	414.5	473.1	513.9	535.3	539.2	527.7	500.3
27.5°	281.8	290.1	311.6	349.4	412.4	471.6	512.8	534.4	538.1	526.5	498.9
28°	278.4	286.9	308.5	346.5	410.1	470.1	511.7	533.2	536.9	525.1	497.4
28.5°	275.0	283.6	305.4	343.6	407.9	468.5	510.4	532.0	535.7	523.8	495.9
29°	271.5	280.3	302.3	340.7	405.7	466.8	509.0	530.7	534.2	522.2	494.2
29.5°	268.0	276.8	299.2	337.8	403.2	465.0	507.5	529.3	532.6	520.6	492.4
30°	264.5	273.4	296.0	335.0	400.9	463.0	505.9	527.7	530.9	518.8	490.5
30.5°	260.8	269.9	292.8	331.9	398.4	461.1	504.2	525.9	529.1	517.0	488.4
31°	257.1	266.5	289.6	328.9	395.9	459.1	502.4	524.0	527.1	515.0	486.3
31.5°	253.4	262.9	286.3	325.9	393.2	456.9	500.5	522.1	525.1	512.8	484.1
32°	249.5	259.4	283.1	322.7	390.6	454.7	498.5	520.0	522.9	510.5	481.8
32.5°	245.7	255.7	279.8	319.7	388.0	452.4	496.3	517.9	520.6	508.2	479.3
33°	242.0	252.0	276.5	316.5	385.2	450.0	494.1	515.5	518.1	505.7	476.6
33.5°	238.0	248.3	273.2	313.4	382.3	447.5	491.6	513.0	515.4	502.8	473.8
34°	234.2	244.5	269.8	310.1	379.4	444.8	489.1	510.3	512.6	499.9	470.7
34.5°	230.0	240.7	266.4	306.9	376.5	442.1	486.5	507.5	509.5	496.5	467.4
35°	226.1	236.7	263.0	303.6	373.4	439.4	483.6	504.3	505.9	493.0	463.9
35.5°	221.9	232.9	259.5	300.3	370.3	436.3	480.5	500.9	502.2	489.0	460.2
36°	218.0	229.0	255.9	297.0	367.1	433.1	477.1	497.1	497.9	484.7	456.8
36.5°	213.7	225.0	252.5	293.6	363.8	429.9	473.5	492.8	493.3	480.3	453.2
37°	209.7	221.0	248.9	290.3	360.6	426.5	469.8	488.4	487.8	475.6	449.4
37.5°	205.4	216.9	245.3	286.8	357.3	423.4	466.2	483.6	482.7	470.2	444.9
38°	201.3	212.8	241.7	283.6	354.3	420.3	462.3	478.3	476.6	464.4	439.9
38.5°	197.0	208.7	238.0	280.2	351.2	417.4	457.9	472.6	470.6	458.5	434.5
39°	193.0	204.5	234.4	276.8	348.1	414.0	453.0	466.9	464.1	452.2	428.9
39.5°	189.0	200.4	230.7	273.5	345.1	410.3	448.0	460.7	457.5	445.7	422.9
40°	185.1	196.2	226.9	270.2	341.9	406.1	442.5	454.1	450.5	438.8	416.8
40.5°	181.1	192.1	223.1	266.8	338.4	401.3	436.6	447.5	443.2	431.8	410.3
41°	177.5	188.0	219.3	263.4	334.5	396.5	430.5	440.3	435.9	424.5	403.8
41.5°	173.7	184.0	215.5	259.9	330.5	391.4	424.2	433.2	428.2	417.2	396.9
42°	170.3	179.9	211.7	256.3	326.2	385.9	417.7	425.7	420.5	409.7	390.0
42.5°	166.8	176.1	207.8	252.5	321.8	380.6	411.0	418.0	412.7	401.9	383.1
43°	163.3	172.3	203.9	248.6	317.2	375.0	404.0	410.4	404.7	394.4	376.0
43.5°	159.9	168.6	200.0	244.5	312.5	369.1	396.8	402.5	396.6	386.3	368.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	150.0	158.0	187.7	231.9	297.6	350.6	375.0	378.4	372.0	362.5	346.6
45.5°	147.1	154.6	183.6	227.8	292.4	344.4	367.3	370.4	363.9	354.5	339.1
46°	143.9	151.2	179.4	223.3	287.3	337.7	359.8	362.2	355.5	346.5	331.7
46.5°	140.8	147.9	175.1	218.7	282.1	331.1	352.2	354.1	347.3	338.4	324.2
47°	137.8	144.7	170.8	214.2	276.6	324.4	344.5	345.7	339.0	330.4	316.7
47.5°	134.8	141.4	166.5	209.6	271.1	317.7	336.7	337.6	331.0	322.5	309.2
48°	131.9	138.3	162.1	205.0	265.5	310.9	329.1	329.7	322.9	314.7	301.8
48.5°	129.0	135.2	157.9	200.4	260.0	304.0	321.3	321.6	315.0	306.8	294.4
49°	126.3	132.1	153.7	195.6	254.5	297.2	313.6	313.7	306.7	299.1	287.2
49.5°	123.4	129.1	149.6	190.9	248.7	290.3	306.1	305.6	298.9	291.2	279.9
50°	120.6	126.2	145.5	186.2	243.0	283.5	298.5	297.7	291.1	283.7	272.6
50.5°	117.8	123.3	141.4	181.4	237.2	276.6	290.7	290.0	283.5	276.1	265.4
51°	115.2	120.3	137.6	176.6	231.4	269.6	283.1	282.2	275.8	268.7	258.3
51.5°	112.6	117.5	133.7	171.7	225.8	263.0	275.9	274.7	268.2	261.4	251.5
52°	109.9	114.6	129.9	167.0	219.9	256.2	268.5	267.1	261.0	254.1	244.4
52.5°	107.4	111.9	126.3	162.2	214.1	249.2	261.1	259.6	253.4	247.0	237.5
53°	104.8	109.1	122.5	157.4	208.4	242.5	253.8	252.3	246.5	240.1	230.8
53.5°	102.4	106.4	118.9	152.7	202.6	235.9	246.7	245.2	239.1	233.0	224.2
54°	99.8	103.8	115.3	148.0	196.9	229.2	239.7	238.1	232.4	226.2	217.6
54.5°	97.5	101.2	111.9	143.3	191.2	222.7	232.7	231.1	225.2	219.5	211.2
55°	95.0	98.6	108.5	138.7	185.7	216.3	225.8	224.3	219.0	213.2	204.9
55.5°	92.7	96.1	105.2	134.2	180.1	209.7	219.3	217.6	212.1	206.6	198.7
56°	90.4	93.6	101.8	129.6	174.6	203.4	212.4	210.9	205.9	200.2	192.5
56.5°	88.1	91.2	98.8	125.2	169.2	197.4	205.9	204.4	199.2	194.1	186.5
57°	85.8	88.6	95.6	120.9	163.7	191.1	199.5	198.1	193.5	188.0	180.5
57.5°	83.7	86.4	92.6	116.6	158.6	185.0	193.1	191.9	187.1	182.0	174.8
58°	81.5	84.0	89.7	112.4	153.2	179.1	187.1	185.8	181.4	176.2	169.2
58.5°	79.4	81.8	86.8	108.3	148.1	173.3	181.1	179.9	175.3	170.6	163.6
59°	77.4	79.6	84.0	104.3	143.0	167.5	175.1	174.0	169.9	165.1	158.3
59.5°	75.4	77.4	81.4	100.4	138.0	162.0	169.1	168.3	164.1	159.5	152.8
60°	73.4	75.3	78.7	96.5	133.1	156.4	163.4	162.7	158.5	154.3	147.7
60.5°	71.5	73.2	76.1	92.9	128.3	151.0	157.9	157.3	153.2	149.2	142.6
61°	69.5	71.1	73.6	89.2	123.7	145.7	152.6	152.0	147.6	144.1	137.6
61.5°	67.6	69.2	71.3	85.6	119.0	140.6	147.3	146.7	142.6	139.1	132.8
62°	65.8	67.3	69.0	82.3	114.5	135.5	142.0	141.7	137.6	134.2	128.1
62.5°	64.0	65.4	66.8	79.0	110.3	130.6	136.9	136.6	132.3	129.4	123.5
63°	62.3	63.5	64.6	75.8	106.0	125.6	132.0	131.7	127.8	124.7	118.9
63.5°	60.6	61.6	62.5	72.6	101.6	120.8	127.1	126.9	122.9	120.1	114.6
64°	58.9	59.9	60.5	69.6	97.9	116.2	122.5	122.3	118.2	115.6	110.3
64.5°	57.2	58.1	58.5	66.8	94.1	111.8	117.9	117.7	113.9	111.3	106.1
65°	55.3	56.4	56.7	64.0	90.2	107.5	113.5	113.4	109.5	107.2	102.2
65.5°	53.6	54.7	54.8	61.3	86.4	103.2	109.1	109.1	105.2	103.0	98.2
66°	51.9	53.0	53.0	58.7	82.5	99.0	104.9	104.9	101.1	99.0	94.3



TEST NUMBER: P775879

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	46.6	48.0	48.0	51.4	72.0	87.4	93.1	93.2	89.8	87.8	83.5
68°	45.0	46.4	46.4	49.1	68.7	83.7	89.5	89.6	86.1	84.1	79.9
68.5°	43.3	44.8	44.8	46.9	65.6	79.9	85.7	85.8	82.4	80.5	76.5
69°	41.6	43.2	43.2	44.7	62.4	76.4	82.1	82.2	78.7	77.2	73.2
69.5°	40.0	41.5	41.7	42.8	59.5	72.8	78.4	78.6	75.4	73.9	70.0
70°	38.2	39.9	40.2	40.8	56.6	69.4	75.0	75.3	72.2	70.7	66.8
70.5°	36.7	38.2	38.8	39.0	53.9	66.2	71.6	72.0	69.0	67.6	63.8
71°	35.2	36.7	37.4	37.3	51.1	63.2	68.5	68.9	65.9	64.5	60.9
71.5°	33.6	35.3	36.0	35.7	48.5	60.1	65.4	65.8	62.8	61.5	58.0
72°	32.1	33.8	34.7	34.0	46.0	57.2	62.3	62.7	59.9	58.7	55.2
72.5°	30.6	32.4	33.4	32.4	43.5	54.3	59.4	59.8	57.1	55.9	52.5
73°	29.1	30.9	32.0	30.7	41.2	51.5	56.4	57.1	54.3	53.1	49.9
73.5°	27.5	29.4	30.6	29.3	38.8	48.8	53.9	54.3	51.6	50.5	47.3
74°	26.0	28.0	29.3	27.9	36.7	46.3	51.1	51.7	49.1	48.0	44.9
74.5°	24.6	26.7	28.0	26.6	34.6	43.8	48.4	49.1	46.5	45.6	42.6
75°	23.1	25.2	26.8	25.3	32.5	41.4	45.9	46.6	44.0	43.2	40.2
75.5°	21.8	23.9	25.5	24.1	30.5	39.0	43.5	44.2	41.7	40.8	38.0
76°	20.4	22.5	24.3	22.9	28.7	36.8	41.1	41.8	39.4	38.5	35.7
76.5°	19.1	21.1	23.0	21.8	26.9	34.6	38.8	39.6	37.2	36.4	33.7
77°	17.8	19.8	21.9	20.7	25.2	32.5	36.6	37.3	35.0	34.2	31.7
77.5°	16.7	18.6	20.7	19.7	23.5	30.5	34.4	35.2	32.8	32.2	29.6
78°	15.8	17.4	19.5	18.7	21.9	28.5	32.3	33.2	30.8	30.2	27.7
78.5°	14.8	16.3	18.3	17.7	20.3	26.7	30.4	31.1	28.9	28.3	25.9
79°	13.9	15.2	17.3	16.6	18.9	24.8	28.4	29.2	26.9	26.3	24.2
79.5°	13.0	14.3	16.2	15.7	17.4	23.0	26.6	27.3	25.1	24.6	22.4
80°	12.1	13.4	15.1	14.7	16.1	21.4	24.7	25.4	23.2	22.8	20.7
80.5°	11.3	12.5	14.1	13.9	14.7	19.8	22.9	23.7	21.4	21.1	19.2
81°	10.5	11.6	13.1	12.9	13.7	18.2	21.3	22.0	19.7	19.4	17.6
81.5°	9.6	10.7	12.3	11.9	12.4	16.7	19.6	20.3	18.0	17.8	16.1
82°	8.7	9.8	11.3	11.1	11.3	15.4	18.1	18.7	16.4	16.3	14.6
82.5°	8.0	9.0	10.5	10.2	10.2	14.0	16.5	17.1	14.8	14.8	13.2
83°	7.1	8.1	9.6	9.4	9.3	12.7	15.1	15.6	13.3	13.3	11.9
83.5°	6.3	7.3	8.7	8.6	8.4	11.5	13.7	14.1	11.7	11.9	10.8
84°	5.5	6.5	7.9	7.8	7.6	10.5	12.4	12.7	10.3	10.7	9.6
84.5°	4.8	5.7	7.0	7.0	6.6	9.3	11.0	11.3	8.9	9.4	8.4
85°	4.1	4.9	6.2	6.2	5.8	8.2	9.9	10.0	7.5	8.1	7.3
85.5°	3.4	4.1	5.4	5.4	5.0	7.1	8.7	8.9	6.1	6.8	6.1
86°	2.8	3.4	4.6	4.7	4.3	6.1	7.6	7.7	4.6	5.5	4.9
86.5°	2.1	2.9	3.9	3.9	3.6	5.2	6.4	6.4	3.4	4.6	3.9
87°	1.6	2.2	3.2	3.3	3.0	4.3	5.2	5.2	2.8	3.6	3.0
87.5°	1.1	1.6	2.6	2.7	2.3	3.4	4.3	4.2	2.1	2.8	2.0
88°	0.6	1.1	1.8	1.9	1.8	2.7	3.2	3.2	1.5	1.8	1.2
88.5°	0.3	0.6	1.2	1.3	1.3	1.9	2.3	2.1	0.9	0.9	0.3



TEST NUMBER: P775879
CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-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	0.1	0.1	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775879

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	457.0	457.0	457.0	457.0	457.0	457.0
0.5°	458.2	457.9	456.2	454.7	453.3	452.6
1°	459.4	457.8	454.7	452.1	449.8	449.0
1.5°	460.6	457.6	453.1	449.3	446.3	445.2
2°	461.8	457.4	451.5	446.6	442.8	441.4
2.5°	462.9	457.2	449.9	443.7	439.4	437.8
3°	464.0	456.9	448.3	441.0	436.1	434.3
3.5°	465.0	456.6	446.6	438.2	432.9	430.8
4°	466.0	456.3	444.9	435.5	429.6	427.6
4.5°	467.0	456.0	443.2	432.9	426.5	424.3
5°	467.8	455.7	441.4	430.3	423.5	421.2
5.5°	468.7	455.3	439.7	427.6	420.5	418.0
6°	469.5	454.8	437.9	425.2	417.5	414.9
6.5°	470.3	454.4	436.2	422.6	414.5	411.9
7°	471.0	454.0	434.4	420.2	411.5	408.7
7.5°	471.8	453.4	432.5	417.6	408.5	405.6
8°	472.4	452.9	430.8	415.2	405.6	402.5
8.5°	473.1	452.4	428.9	412.6	402.6	399.4
9°	473.7	451.7	427.1	410.0	399.5	396.3
9.5°	474.2	451.1	425.3	407.5	396.6	393.2
10°	474.8	450.5	423.5	405.0	393.6	390.1
10.5°	475.2	449.7	421.6	402.4	390.6	387.1
11°	475.6	449.0	419.7	399.8	387.6	383.9
11.5°	475.9	448.2	417.8	397.1	384.7	380.8
12°	476.3	447.5	415.9	394.6	381.7	377.7
12.5°	476.6	446.6	413.9	391.9	378.7	374.7
13°	476.8	445.7	412.0	389.2	375.8	371.7
13.5°	477.0	444.8	409.9	386.6	372.7	368.7
14°	477.1	443.8	407.9	383.9	369.7	365.6
14.5°	477.1	442.8	405.9	381.1	366.7	362.5
15°	477.1	441.7	403.9	378.5	363.8	359.5
15.5°	477.1	440.6	401.6	375.7	360.6	356.4
16°	477.0	439.5	399.5	372.9	357.7	353.4
16.5°	476.9	438.3	397.4	370.2	354.7	350.4
17°	476.7	437.0	395.1	367.5	351.7	347.3
17.5°	476.4	435.7	392.8	364.6	348.6	344.4
18°	476.1	434.5	390.5	361.8	345.6	341.3
18.5°	475.6	433.0	388.2	358.9	342.5	338.3
19°	475.1	431.6	385.8	356.1	339.6	335.3
19.5°	474.6	430.1	383.4	353.2	336.6	332.2
20°	473.9	428.5	381.0	350.4	333.6	329.2
20.5°	473.3	427.0	378.5	347.4	330.5	326.1
21°	472.5	425.3	376.0	344.5	327.5	323.1

TEST NUMBER: P775879

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	469.9	420.0	368.2	335.6	318.2	313.9
23°	468.7	418.1	365.6	332.7	315.1	310.8
23.5°	467.6	416.1	362.9	329.6	312.0	307.7
24°	466.4	414.2	360.2	326.6	308.9	304.6
24.5°	465.1	412.1	357.5	323.6	305.7	301.4
25°	463.7	409.9	354.7	320.6	302.7	298.2
25.5°	462.3	407.8	351.8	317.5	299.6	295.0
26°	460.7	405.7	349.0	314.4	296.4	291.8
26.5°	459.1	403.4	346.2	311.3	293.1	288.6
27°	457.4	401.0	343.3	308.2	289.9	285.2
27.5°	455.6	398.6	340.3	305.0	286.6	281.8
28°	453.7	396.2	337.3	301.8	283.1	278.4
28.5°	451.7	393.7	334.3	298.6	279.9	275.0
29°	449.7	391.1	331.3	295.5	276.5	271.5
29.5°	447.6	388.5	328.4	292.3	273.2	268.0
30°	445.3	385.8	325.3	289.1	269.8	264.5
30.5°	443.0	383.1	322.1	285.7	266.3	260.8
31°	440.6	380.3	319.0	282.5	262.8	257.1
31.5°	438.1	377.5	315.9	279.2	259.1	253.4
32°	435.6	374.4	312.6	275.9	255.5	249.5
32.5°	432.9	371.5	309.4	272.6	251.9	245.7
33°	430.1	368.5	306.1	269.2	248.3	242.0
33.5°	427.1	365.4	302.9	265.8	244.4	238.0
34°	423.9	362.1	299.5	262.3	240.7	234.2
34.5°	420.7	358.7	296.1	258.9	237.0	230.0
35°	417.3	355.4	292.7	255.4	233.0	226.1
35.5°	414.1	352.3	289.4	251.9	229.2	221.9
36°	411.1	349.4	286.1	248.5	225.2	218.0
36.5°	408.2	346.4	282.8	244.9	221.2	213.7
37°	405.2	343.4	279.5	241.2	217.2	209.7
37.5°	401.9	340.4	276.2	237.7	213.2	205.4
38°	398.2	337.2	272.9	234.1	209.1	201.3
38.5°	394.0	333.8	269.6	230.6	205.0	197.0
39°	389.2	330.1	266.4	226.8	200.9	193.0
39.5°	384.2	326.0	262.9	223.3	196.8	189.0
40°	378.9	321.6	259.2	219.5	192.7	185.1
40.5°	373.6	317.1	255.5	215.8	188.4	181.1
41°	368.0	312.5	251.7	212.1	184.4	177.5
41.5°	362.2	307.6	247.8	208.4	180.3	173.7
42°	356.3	302.7	243.7	204.4	176.4	170.3
42.5°	350.3	297.6	239.5	200.6	172.7	166.8
43°	344.4	292.5	235.3	196.7	168.8	163.3
43.5°	338.0	287.3	231.0	192.6	165.2	159.9

TEST NUMBER: P775879

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	318.9	271.3	217.4	180.2	154.5	150.0
45.5°	312.3	265.8	212.9	176.1	151.2	147.1
46°	305.6	260.4	208.3	171.7	147.7	143.9
46.5°	299.3	254.7	203.6	167.5	144.5	140.8
47°	292.5	249.1	198.9	163.2	141.3	137.8
47.5°	285.8	243.4	194.1	158.8	138.1	134.8
48°	279.2	237.9	189.4	154.4	134.9	131.9
48.5°	272.8	232.2	184.6	150.2	131.8	129.0
49°	266.0	226.6	179.9	145.9	128.7	126.3
49.5°	259.4	221.0	175.1	141.8	125.7	123.4
50°	252.7	215.2	170.3	137.7	122.7	120.6
50.5°	246.5	209.7	165.5	133.7	119.8	117.8
51°	239.6	204.1	161.0	129.7	116.9	115.2
51.5°	233.5	198.6	156.2	125.9	114.0	112.6
52°	226.9	192.9	151.6	122.1	111.2	109.9
52.5°	220.8	187.3	147.0	118.4	108.5	107.4
53°	214.5	181.9	142.4	114.6	105.8	104.8
53.5°	208.4	176.6	137.8	111.2	103.0	102.4
54°	202.1	171.2	133.4	107.7	100.4	99.8
54.5°	196.2	165.8	129.0	104.2	97.8	97.5
55°	190.3	160.8	124.7	100.9	95.2	95.0
55.5°	184.5	155.6	120.3	97.7	92.8	92.7
56°	178.6	150.6	116.2	94.5	90.3	90.4
56.5°	173.0	145.5	112.1	91.3	87.9	88.1
57°	167.4	140.6	108.0	88.3	85.4	85.8
57.5°	162.1	135.7	104.0	85.4	83.1	83.7
58°	156.7	131.1	100.2	82.6	80.8	81.5
58.5°	151.5	126.5	96.5	79.9	78.6	79.4
59°	146.2	121.9	92.9	77.2	76.5	77.4
59.5°	141.2	117.3	89.3	74.7	74.3	75.4
60°	136.3	113.0	85.8	72.2	72.2	73.4
60.5°	131.5	108.7	82.4	69.7	70.2	71.5
61°	126.7	104.6	79.1	67.4	68.1	69.5
61.5°	122.2	100.7	76.0	65.2	66.2	67.6
62°	117.6	96.6	72.9	63.0	64.3	65.8
62.5°	113.3	92.8	69.9	60.9	62.5	64.0
63°	108.9	88.9	67.0	58.9	60.7	62.3
63.5°	104.7	85.3	64.2	56.8	58.8	60.6
64°	100.6	81.7	61.5	55.0	57.2	58.9
64.5°	96.6	78.3	58.9	53.2	55.5	57.2
65°	93.0	74.9	56.4	51.4	53.7	55.3
65.5°	89.3	71.7	54.0	49.7	52.1	53.6
66°	85.5	68.4	51.6	48.1	50.5	51.9



TEST NUMBER: P775879

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	74.8	59.4	45.0	43.3	45.6	46.6
68°	71.5	56.5	43.0	41.8	43.9	45.0
68.5°	68.3	53.7	41.1	40.3	42.3	43.3
69°	65.2	51.2	39.1	38.9	40.7	41.6
69.5°	62.1	48.6	37.4	37.6	39.1	40.0
70°	59.1	46.1	35.7	36.3	37.6	38.2
70.5°	56.3	43.7	34.0	35.0	36.2	36.7
71°	53.5	41.4	32.3	33.6	34.7	35.2
71.5°	50.8	39.1	30.7	32.2	33.2	33.6
72°	48.2	37.1	29.2	30.9	31.7	32.1
72.5°	45.6	35.2	27.7	29.6	30.2	30.6
73°	43.2	33.2	26.2	28.4	28.7	29.1
73.5°	40.8	31.1	25.0	27.1	27.3	27.5
74°	38.6	29.1	23.7	25.9	25.9	26.0
74.5°	36.4	27.3	22.5	24.6	24.5	24.6
75°	34.2	25.6	21.3	23.5	23.1	23.1
75.5°	32.2	23.9	20.2	22.3	21.8	21.8
76°	30.2	22.3	19.1	21.1	20.5	20.4
76.5°	28.4	20.8	18.0	19.9	19.1	19.1
77°	26.4	19.3	17.1	18.8	17.9	17.8
77.5°	24.7	17.9	16.1	17.7	16.6	16.7
78°	23.0	16.5	15.2	16.5	15.6	15.8
78.5°	21.3	15.2	14.3	15.5	14.5	14.8
79°	19.8	14.0	13.3	14.5	13.5	13.9
79.5°	18.2	12.8	12.5	13.4	12.7	13.0
80°	16.7	11.6	11.6	12.4	11.7	12.1
80.5°	15.4	10.6	10.8	11.5	10.9	11.3
81°	14.1	9.6	9.9	10.6	10.0	10.5
81.5°	12.8	8.6	9.1	9.7	9.1	9.6
82°	11.5	7.7	8.3	8.9	8.2	8.7
82.5°	10.5	6.8	7.6	8.0	7.5	8.0
83°	9.5	6.1	6.8	7.3	6.6	7.1
83.5°	8.4	5.3	6.0	6.4	5.8	6.3
84°	7.4	4.6	5.3	5.7	5.0	5.5
84.5°	6.3	3.8	4.6	4.9	4.3	4.8
85°	5.2	3.3	3.8	4.2	3.6	4.1
85.5°	4.4	2.7	3.2	3.5	3.0	3.4
86°	3.5	2.1	2.6	2.9	2.3	2.8
86.5°	2.7	1.5	1.9	2.1	1.8	2.1
87°	1.9	1.1	1.3	1.5	1.3	1.6
87.5°	1.3	0.5	0.7	1.0	0.9	1.1
88°	0.5	0.2	0.2	0.4	0.5	0.6
88.5°	0.1	0.0	0.0	0.1	0.2	0.3



TEST NUMBER: P775879
CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-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°	320.0	327.2	346.8	380.6	434.0	483.5	519.0	538.9	543.1	533.1	508.9
22°	316.9	324.3	343.9	378.3	432.5	483.0	519.0	539.1	543.2	533.1	508.6



44°	156.6	165.1	195.9	240.5	307.6	363.0	389.8	394.6	388.3	378.5	361.3
44.5°	153.4	161.5	191.9	236.3	302.8	356.9	382.3	386.5	380.4	370.5	354.1



66.5°	50.1	51.4	51.3	56.1	78.7	95.0	100.8	100.8	97.2	95.1	90.8
67°	48.4	49.7	49.6	53.6	75.3	91.3	96.8	96.8	93.4	91.5	87.1



89°	0.1	0.3	0.5	0.7	0.9	1.2	1.4	1.1	0.2	0.1	0.0
89.5°	0.0	0.1	0.1	0.2	0.4	0.5	0.5	0.2	0.0	0.0	0.0

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21.5°	471.7	423.6	373.5	341.6	324.4	320.0
22°	470.7	421.8	370.9	338.6	321.3	316.9



44°	331.8	282.0	226.5	188.5	161.6	156.6
44.5°	325.0	276.6	221.9	184.5	158.0	153.4



66.5°	81.9	65.3	49.4	46.5	48.8	50.1
67°	78.2	62.2	47.1	44.9	47.2	48.4

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

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(END OF REPORT)