

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: P775878

Luminaire Tested: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-4000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P775878
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-4000K
Description: 8 INCH ROUND MEDIUM LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

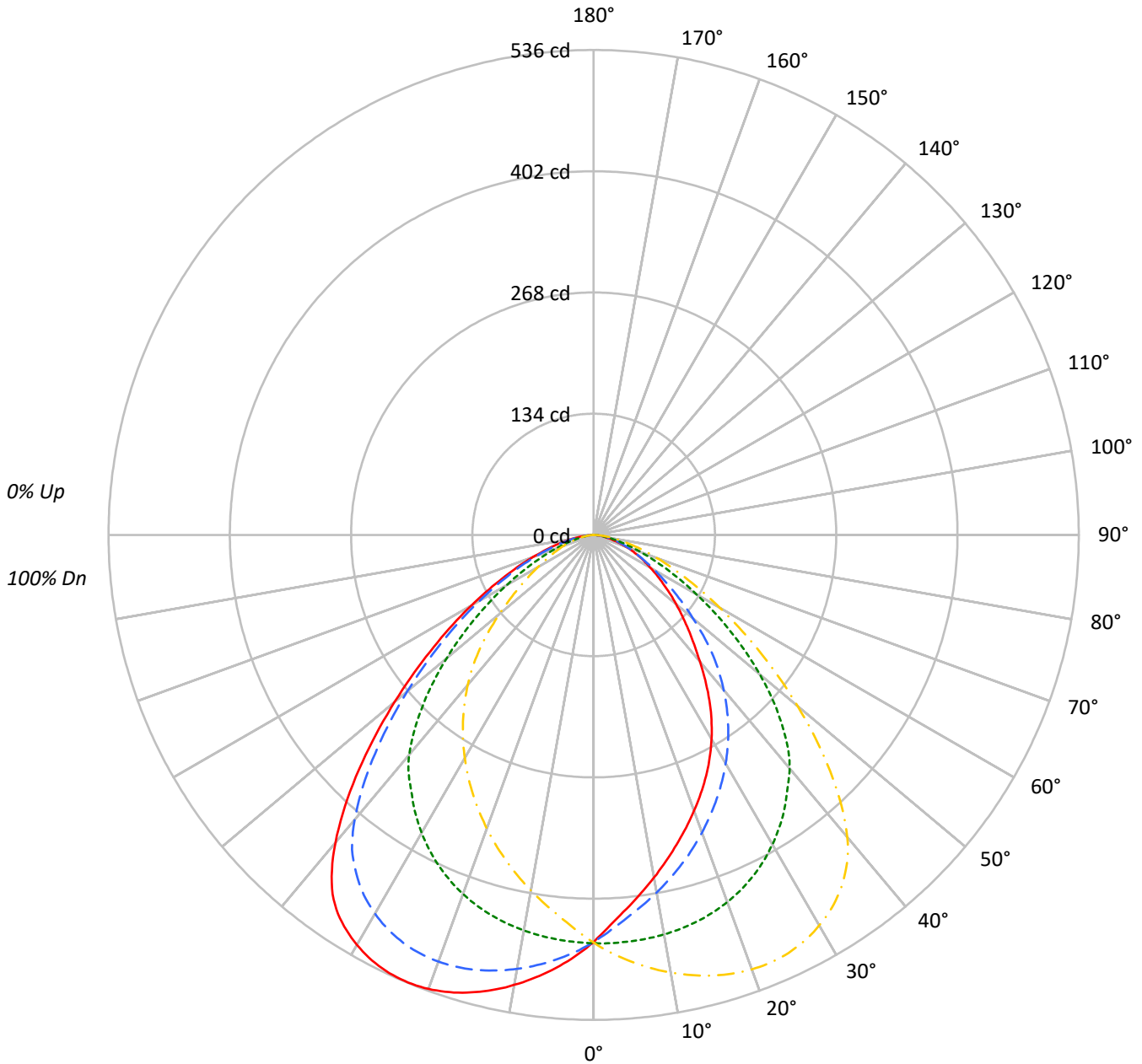
Lumens per Lamp: N/A
Luminaire Lumens: 1052.9 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.27 / 1.32
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	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°	13748	13748	13748	13748
5°	12722	13825	14726	13760
10°	11917	13898	15656	13761
15°	11195	13977	16546	13759
20°	10540	14029	17346	13717
25°	9897	14020	17999	13609
30°	9187	13925	18441	13403
35°	8304	13712	18579	13056
40°	7269	13427	17691	12630
45°	6386	12664	15824	11541
50°	5647	11375	13627	10074
55°	4982	9741	11487	8437
60°	4415	8005	9538	6802
65°	3937	6422	7795	5331
70°	3356	4981	6347	4053
75°	2689	3787	5119	2973
80°	2092	2795	4026	2022
85°	1401	1997	2592	1156

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 16096 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.7	4.1
10°-20°	123.7	11.8
20°-30°	189.4	18.0
30°-40°	224.2	21.3
40°-50°	205.9	19.6
50°-60°	144.0	13.7
60°-70°	80.7	7.7
70°-80°	34.8	3.3
80°-90°	7.3	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°	355.8	33.8
0°-40°	580.1	55.1
0°-60°	930.0	88.3
0°-90°	1052.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1052.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	450	450	450	450	450	
5°	415	451	480	449	415	39
15°	354	442	524	435	354	100
25°	294	416	534	404	294	135
35°	223	368	498	350	223	139
45°	148	293	366	267	148	115
55°	94	183	216	158	94	84
65°	54	89	108	74	54	54
75°	23	32	43	25	23	25
85°	4	6	7	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°	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3
0.5°	446.0	446.3	447.5	449.0	451.5	452.4	453.3	453.3	453.1	452.7	452.4
1°	442.4	443.0	444.9	447.7	451.5	453.8	455.8	456.5	456.6	456.0	454.7
1.5°	438.7	439.6	442.4	446.3	451.6	455.2	458.2	459.7	459.9	458.9	456.9
2°	435.0	436.2	439.8	444.9	451.6	456.5	460.5	462.6	463.0	461.9	459.2
2.5°	431.4	432.9	437.2	443.5	451.6	457.8	462.8	465.4	466.1	464.7	461.3
3°	427.9	429.6	434.6	442.1	451.6	459.1	464.9	468.3	469.1	467.4	463.4
3.5°	424.6	426.5	432.0	440.6	451.5	460.3	467.1	471.0	472.1	470.1	465.3
4°	421.4	423.5	429.6	439.1	451.3	461.4	469.2	473.7	474.9	472.7	467.3
4.5°	418.1	420.6	427.1	437.6	451.2	462.6	471.3	476.5	477.7	475.2	469.2
5°	415.1	417.6	424.7	436.0	451.1	463.7	473.3	479.0	480.5	477.7	471.1
5.5°	411.9	414.7	422.3	434.4	451.0	464.7	475.3	481.6	483.2	480.2	472.9
6°	408.9	411.8	419.9	433.0	450.8	465.7	477.2	484.0	485.8	482.7	474.7
6.5°	405.8	409.0	417.6	431.4	450.6	466.8	479.2	486.6	488.4	484.9	476.4
7°	402.7	406.2	415.3	429.8	450.4	467.7	481.0	488.9	491.0	487.2	478.0
7.5°	399.6	403.3	413.0	428.2	450.1	468.7	482.9	491.2	493.4	489.5	479.6
8°	396.6	400.4	410.7	426.7	449.8	469.5	484.6	493.5	495.9	491.7	481.2
8.5°	393.6	397.5	408.4	425.1	449.5	470.4	486.3	495.8	498.3	493.8	482.8
9°	390.5	394.7	406.0	423.4	449.1	471.2	487.9	497.9	500.6	495.8	484.2
9.5°	387.5	391.9	403.6	421.8	448.7	471.9	489.6	500.0	502.8	497.9	485.6
10°	384.4	388.9	401.2	420.2	448.3	472.8	491.1	502.2	505.0	499.8	487.0
10.5°	381.5	386.1	398.8	418.7	447.9	473.4	492.6	504.1	507.3	501.8	488.3
11°	378.3	383.3	396.4	417.0	447.4	474.0	494.2	506.1	509.4	503.6	489.6
11.5°	375.3	380.4	394.0	415.3	446.8	474.7	495.6	508.0	511.4	505.4	490.9
12°	372.2	377.5	391.4	413.6	446.3	475.3	497.0	509.9	513.2	507.2	492.0
12.5°	369.3	374.6	389.0	411.8	445.8	475.8	498.3	511.8	515.1	508.7	493.1
13°	366.2	371.8	386.6	410.0	445.1	476.4	499.6	513.5	517.0	510.4	494.1
13.5°	363.3	369.0	384.1	408.4	444.4	476.8	500.8	515.0	518.7	511.9	495.2
14°	360.2	366.0	381.6	406.5	443.7	477.1	502.0	516.7	520.4	513.4	496.1
14.5°	357.2	363.2	379.0	404.7	442.9	477.5	503.2	518.2	522.0	514.7	497.0
15°	354.2	360.2	376.5	402.7	442.2	477.8	504.2	519.7	523.5	516.1	497.8
15.5°	351.2	357.3	374.0	400.9	441.4	478.0	505.2	521.0	525.0	517.2	498.5
16°	348.3	354.5	371.4	398.9	440.5	478.3	506.1	522.4	526.4	518.4	499.2
16.5°	345.3	351.6	368.8	397.0	439.6	478.4	506.9	523.5	527.6	519.6	499.8
17°	342.3	348.7	366.2	394.9	438.6	478.5	507.8	524.7	528.8	520.5	500.3
17.5°	339.3	345.8	363.5	392.8	437.6	478.5	508.5	525.8	529.8	521.4	500.7
18°	336.3	342.9	360.9	390.7	436.5	478.5	509.1	526.7	530.9	522.3	501.2
18.5°	333.3	340.1	358.1	388.6	435.4	478.4	509.7	527.6	531.7	522.9	501.5
19°	330.4	337.1	355.5	386.4	434.2	478.3	510.2	528.5	532.6	523.6	501.7
19.5°	327.3	334.3	352.8	384.3	433.1	478.0	510.6	529.1	533.3	524.2	501.8
20°	324.4	331.2	350.0	382.0	431.8	477.7	510.9	529.7	533.9	524.6	501.9
20.5°	321.4	328.3	347.3	379.8	430.5	477.3	511.2	530.3	534.5	524.9	501.8
21°	318.4	325.3	344.5	377.5	429.1	476.9	511.4	530.7	534.9	525.2	501.7



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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°	309.3	316.5	336.2	370.3	424.8	475.3	511.5	531.3	535.5	525.3	500.8
23°	306.2	313.6	333.2	367.8	423.2	474.6	511.2	531.3	535.4	525.1	500.3
23.5°	303.2	310.6	330.5	365.4	421.5	473.8	510.9	531.2	535.3	524.9	499.8
24°	300.1	307.6	327.6	362.9	419.7	473.0	510.6	531.0	535.1	524.5	499.1
24.5°	297.0	304.4	324.7	360.2	418.0	472.1	510.2	530.7	534.7	524.0	498.3
25°	293.8	301.5	321.8	357.7	416.2	471.0	509.6	530.3	534.3	523.4	497.5
25.5°	290.7	298.3	318.9	355.1	414.5	469.9	508.9	529.7	533.7	522.7	496.5
26°	287.5	295.3	316.0	352.5	412.5	468.8	508.2	529.1	533.0	521.9	495.4
26.5°	284.4	292.1	313.1	349.7	410.5	467.4	507.4	528.4	532.2	520.9	494.2
27°	281.0	289.1	310.0	347.0	408.5	466.2	506.4	527.5	531.3	520.0	493.0
27.5°	277.6	285.8	307.1	344.3	406.4	464.7	505.4	526.6	530.3	518.8	491.6
28°	274.4	282.7	304.0	341.4	404.2	463.2	504.2	525.4	529.1	517.4	490.1
28.5°	271.0	279.4	301.0	338.6	402.0	461.6	502.9	524.3	527.9	516.2	488.7
29°	267.6	276.2	297.9	335.8	399.8	460.0	501.6	522.9	526.4	514.6	487.0
29.5°	264.1	272.8	294.9	332.9	397.3	458.2	500.1	521.5	524.8	513.0	485.2
30°	260.6	269.4	291.7	330.1	395.0	456.3	498.5	520.0	523.1	511.2	483.3
30.5°	257.0	266.0	288.6	327.0	392.6	454.4	496.9	518.2	521.3	509.5	481.3
31°	253.4	262.6	285.4	324.1	390.1	452.4	495.1	516.4	519.4	507.5	479.2
31.5°	249.7	259.0	282.2	321.1	387.5	450.2	493.2	514.5	517.4	505.4	477.0
32°	245.9	255.6	279.0	318.0	384.9	448.1	491.2	512.4	515.2	503.1	474.8
32.5°	242.1	252.0	275.7	315.1	382.3	445.8	489.1	510.3	513.0	500.7	472.3
33°	238.4	248.3	272.5	311.9	379.6	443.5	486.9	508.0	510.5	498.3	469.6
33.5°	234.6	244.6	269.2	308.9	376.7	440.9	484.5	505.5	507.9	495.5	466.9
34°	230.8	241.0	265.9	305.6	373.9	438.3	481.9	502.8	505.2	492.6	463.9
34.5°	226.7	237.2	262.5	302.4	371.0	435.7	479.4	500.1	502.1	489.3	460.6
35°	222.8	233.3	259.1	299.2	367.9	433.0	476.6	497.0	498.5	485.8	457.1
35.5°	218.7	229.5	255.7	295.9	364.9	429.9	473.5	493.6	494.9	481.8	453.5
36°	214.8	225.6	252.2	292.7	361.7	426.8	470.2	489.8	490.7	477.6	450.1
36.5°	210.6	221.7	248.8	289.3	358.5	423.6	466.6	485.6	486.1	473.3	446.6
37°	206.6	217.7	245.3	286.0	355.3	420.2	462.9	481.3	480.7	468.7	442.8
37.5°	202.4	213.7	241.7	282.6	352.0	417.2	459.4	476.6	475.6	463.3	438.4
38°	198.4	209.6	238.1	279.4	349.1	414.1	455.6	471.3	469.6	457.7	433.5
38.5°	194.1	205.7	234.6	276.1	346.1	411.3	451.2	465.7	463.7	451.8	428.1
39°	190.2	201.6	231.0	272.8	343.0	407.9	446.4	460.1	457.3	445.6	422.7
39.5°	186.2	197.5	227.3	269.5	340.1	404.3	441.5	454.0	450.8	439.2	416.8
40°	182.4	193.4	223.6	266.3	336.9	400.2	436.0	447.5	443.9	432.4	410.7
40.5°	178.4	189.3	219.8	262.9	333.4	395.4	430.2	440.9	436.7	425.5	404.3
41°	174.9	185.3	216.1	259.6	329.7	390.7	424.2	433.9	429.5	418.4	397.9
41.5°	171.2	181.3	212.4	256.1	325.7	385.7	418.0	426.9	421.9	411.1	391.1
42°	167.8	177.3	208.6	252.5	321.5	380.3	411.6	419.5	414.4	403.7	384.3
42.5°	164.4	173.5	204.8	248.8	317.2	375.1	405.0	411.9	406.7	396.1	377.5
43°	160.9	169.8	200.9	245.0	312.5	369.5	398.1	404.4	398.8	388.6	370.5
43.5°	157.5	166.1	197.0	241.0	307.9	363.7	391.0	396.6	390.8	380.6	363.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	147.9	155.7	185.0	228.6	293.3	345.5	369.5	372.8	366.5	357.2	341.5
45.5°	144.9	152.4	181.0	224.5	288.1	339.3	361.9	365.0	358.6	349.3	334.2
46°	141.8	149.0	176.8	220.1	283.1	332.8	354.6	356.9	350.4	341.4	326.8
46.5°	138.7	145.8	172.6	215.5	278.0	326.3	347.1	348.9	342.3	333.4	319.5
47°	135.8	142.6	168.3	211.1	272.6	319.7	339.4	340.7	334.1	325.6	312.1
47.5°	132.8	139.3	164.0	206.5	267.1	313.1	331.8	332.7	326.2	317.8	304.6
48°	130.0	136.3	159.7	202.0	261.7	306.3	324.3	324.9	318.2	310.1	297.4
48.5°	127.2	133.3	155.6	197.5	256.2	299.6	316.6	316.9	310.4	302.3	290.1
49°	124.4	130.2	151.4	192.7	250.7	292.9	309.1	309.2	302.2	294.8	283.0
49.5°	121.6	127.3	147.4	188.1	245.1	286.0	301.6	301.2	294.6	287.0	275.9
50°	118.9	124.3	143.3	183.5	239.5	279.3	294.1	293.4	286.9	279.5	268.6
50.5°	116.1	121.5	139.3	178.8	233.7	272.6	286.5	285.7	279.3	272.1	261.6
51°	113.5	118.5	135.6	174.0	228.0	265.7	279.0	278.1	271.8	264.8	254.5
51.5°	111.0	115.8	131.8	169.2	222.5	259.1	271.9	270.7	264.3	257.6	247.8
52°	108.3	113.0	128.0	164.6	216.7	252.4	264.6	263.2	257.1	250.4	240.9
52.5°	105.8	110.2	124.4	159.8	211.0	245.6	257.3	255.8	249.7	243.4	234.0
53°	103.3	107.5	120.7	155.1	205.3	239.0	250.1	248.6	242.9	236.6	227.4
53.5°	100.9	104.9	117.2	150.5	199.7	232.5	243.1	241.6	235.6	229.6	220.9
54°	98.4	102.2	113.6	145.9	194.0	225.8	236.2	234.7	229.0	222.9	214.4
54.5°	96.0	99.7	110.2	141.2	188.4	219.4	229.3	227.7	221.9	216.3	208.1
55°	93.6	97.2	106.9	136.7	183.0	213.1	222.5	221.0	215.8	210.1	201.9
55.5°	91.3	94.7	103.6	132.2	177.5	206.6	216.1	214.4	209.0	203.6	195.8
56°	89.1	92.3	100.4	127.7	172.0	200.4	209.3	207.9	202.9	197.2	189.7
56.5°	86.8	89.8	97.3	123.4	166.8	194.5	202.9	201.5	196.3	191.3	183.8
57°	84.6	87.3	94.2	119.2	161.3	188.3	196.6	195.3	190.6	185.3	177.9
57.5°	82.5	85.1	91.2	114.9	156.3	182.3	190.3	189.1	184.3	179.4	172.2
58°	80.3	82.8	88.4	110.8	151.0	176.4	184.3	183.1	178.8	173.6	166.8
58.5°	78.3	80.6	85.5	106.8	146.0	170.8	178.4	177.3	172.8	168.1	161.2
59°	76.3	78.4	82.8	102.8	140.9	165.1	172.6	171.5	167.4	162.7	155.9
59.5°	74.3	76.3	80.2	98.9	136.0	159.6	166.7	165.8	161.7	157.2	150.6
60°	72.3	74.2	77.6	95.1	131.1	154.2	161.0	160.4	156.2	152.1	145.5
60.5°	70.4	72.1	75.0	91.5	126.4	148.8	155.6	155.0	151.0	147.0	140.5
61°	68.5	70.1	72.5	87.9	121.9	143.5	150.4	149.7	145.4	142.0	135.6
61.5°	66.6	68.2	70.3	84.4	117.3	138.5	145.1	144.6	140.5	137.0	130.8
62°	64.8	66.3	68.0	81.1	112.9	133.6	140.0	139.7	135.6	132.2	126.2
62.5°	63.1	64.4	65.8	77.9	108.7	128.7	134.9	134.6	130.4	127.5	121.7
63°	61.4	62.5	63.7	74.7	104.5	123.8	130.1	129.8	125.9	122.8	117.2
63.5°	59.7	60.7	61.6	71.6	100.1	119.1	125.3	125.1	121.1	118.3	113.0
64°	58.0	59.1	59.6	68.6	96.5	114.5	120.7	120.5	116.4	113.9	108.7
64.5°	56.3	57.3	57.7	65.8	92.7	110.1	116.2	116.0	112.2	109.7	104.6
65°	54.5	55.6	55.9	63.1	88.9	105.9	111.8	111.7	107.9	105.6	100.7
65.5°	52.9	53.9	54.0	60.4	85.1	101.7	107.5	107.5	103.6	101.5	96.8
66°	51.2	52.2	52.2	57.8	81.3	97.5	103.4	103.4	99.6	97.5	92.9



TEST NUMBER: P775878

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	45.9	47.3	47.3	50.7	70.9	86.2	91.7	91.8	88.5	86.5	82.3
68°	44.3	45.7	45.7	48.3	67.7	82.5	88.2	88.3	84.8	82.9	78.7
68.5°	42.7	44.1	44.1	46.2	64.6	78.7	84.5	84.6	81.2	79.3	75.3
69°	41.0	42.6	42.6	44.0	61.5	75.2	80.9	81.0	77.6	76.1	72.1
69.5°	39.4	40.9	41.1	42.1	58.6	71.8	77.2	77.4	74.3	72.8	68.9
70°	37.6	39.3	39.6	40.2	55.8	68.4	73.9	74.2	71.1	69.7	65.8
70.5°	36.1	37.6	38.3	38.5	53.1	65.3	70.5	70.9	68.0	66.6	62.8
71°	34.7	36.1	36.9	36.8	50.3	62.3	67.5	67.9	64.9	63.6	60.0
71.5°	33.1	34.8	35.5	35.2	47.8	59.3	64.4	64.8	61.9	60.6	57.2
72°	31.6	33.3	34.2	33.5	45.3	56.3	61.4	61.8	59.1	57.8	54.4
72.5°	30.2	31.9	32.9	31.9	42.9	53.5	58.5	59.0	56.2	55.1	51.7
73°	28.7	30.5	31.5	30.3	40.6	50.8	55.6	56.2	53.5	52.3	49.2
73.5°	27.1	29.0	30.2	28.9	38.3	48.1	53.1	53.5	50.9	49.8	46.7
74°	25.6	27.6	28.9	27.5	36.1	45.6	50.3	51.0	48.3	47.3	44.2
74.5°	24.3	26.3	27.6	26.2	34.0	43.2	47.7	48.3	45.8	45.0	41.9
75°	22.8	24.8	26.4	24.9	32.1	40.8	45.2	45.9	43.4	42.6	39.6
75.5°	21.4	23.5	25.1	23.7	30.1	38.5	42.9	43.5	41.1	40.2	37.4
76°	20.1	22.2	24.0	22.6	28.3	36.3	40.5	41.2	38.8	37.9	35.2
76.5°	18.8	20.8	22.7	21.4	26.5	34.0	38.3	39.0	36.7	35.8	33.2
77°	17.5	19.5	21.5	20.4	24.8	32.1	36.0	36.8	34.5	33.7	31.2
77.5°	16.5	18.3	20.4	19.4	23.1	30.1	33.9	34.7	32.4	31.7	29.2
78°	15.6	17.1	19.2	18.4	21.5	28.1	31.8	32.7	30.4	29.7	27.3
78.5°	14.6	16.1	18.1	17.4	20.0	26.3	29.9	30.7	28.5	27.8	25.5
79°	13.7	15.0	17.0	16.4	18.6	24.5	28.0	28.8	26.5	26.0	23.9
79.5°	12.8	14.1	16.0	15.4	17.1	22.7	26.2	26.9	24.7	24.3	22.1
80°	11.9	13.2	14.9	14.5	15.9	21.1	24.4	25.0	22.9	22.5	20.4
80.5°	11.1	12.3	13.9	13.7	14.5	19.5	22.6	23.3	21.1	20.8	18.9
81°	10.3	11.5	12.9	12.7	13.5	18.0	21.0	21.6	19.4	19.1	17.3
81.5°	9.5	10.5	12.1	11.8	12.2	16.5	19.3	20.0	17.8	17.5	15.9
82°	8.6	9.7	11.1	10.9	11.1	15.1	17.9	18.4	16.2	16.1	14.4
82.5°	7.9	8.8	10.3	10.1	10.1	13.8	16.3	16.8	14.6	14.6	13.0
83°	7.0	8.0	9.5	9.2	9.1	12.5	14.9	15.3	13.1	13.1	11.8
83.5°	6.2	7.1	8.6	8.5	8.3	11.3	13.5	13.9	11.6	11.8	10.6
84°	5.5	6.4	7.8	7.7	7.5	10.3	12.2	12.5	10.2	10.5	9.5
84.5°	4.7	5.6	6.9	6.9	6.5	9.1	10.8	11.1	8.7	9.2	8.3
85°	4.0	4.8	6.1	6.1	5.7	8.1	9.8	9.9	7.4	8.0	7.1
85.5°	3.4	4.0	5.4	5.4	4.9	7.0	8.6	8.7	6.0	6.7	6.0
86°	2.7	3.4	4.5	4.6	4.2	6.0	7.5	7.6	4.5	5.5	4.8
86.5°	2.1	2.8	3.9	3.9	3.6	5.1	6.3	6.3	3.4	4.5	3.9
87°	1.6	2.2	3.2	3.3	2.9	4.2	5.1	5.1	2.7	3.6	2.9
87.5°	1.1	1.6	2.5	2.6	2.3	3.4	4.2	4.1	2.1	2.7	2.0
88°	0.6	1.1	1.8	1.9	1.8	2.6	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	0.8	0.8	0.3



TEST NUMBER: P775878
CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P775878

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	450.3	450.3	450.3	450.3	450.3	450.3
0.5°	451.6	451.2	449.6	448.1	446.7	446.0
1°	452.7	451.1	448.1	445.5	443.3	442.4
1.5°	453.9	450.9	446.5	442.7	439.8	438.7
2°	455.0	450.7	444.9	440.1	436.3	435.0
2.5°	456.2	450.5	443.4	437.3	433.0	431.4
3°	457.2	450.2	441.8	434.5	429.7	427.9
3.5°	458.2	450.0	440.1	431.8	426.5	424.6
4°	459.2	449.7	438.4	429.2	423.3	421.4
4.5°	460.2	449.4	436.7	426.5	420.2	418.1
5°	461.0	449.0	435.0	424.0	417.3	415.1
5.5°	461.9	448.6	433.3	421.4	414.4	411.9
6°	462.7	448.2	431.5	419.0	411.4	408.9
6.5°	463.4	447.8	429.8	416.5	408.5	405.8
7°	464.2	447.4	428.0	414.0	405.5	402.7
7.5°	464.9	446.8	426.2	411.5	402.6	399.6
8°	465.5	446.3	424.6	409.1	399.6	396.6
8.5°	466.2	445.8	422.7	406.6	396.7	393.6
9°	466.8	445.1	420.9	404.1	393.7	390.5
9.5°	467.3	444.5	419.1	401.5	390.8	387.5
10°	467.8	443.9	417.3	399.1	387.9	384.4
10.5°	468.3	443.2	415.4	396.5	384.9	381.5
11°	468.7	442.4	413.6	394.0	382.0	378.3
11.5°	469.0	441.7	411.7	391.3	379.0	375.3
12°	469.3	440.9	409.8	388.8	376.1	372.2
12.5°	469.6	440.1	407.8	386.2	373.2	369.3
13°	469.8	439.2	406.0	383.6	370.3	366.2
13.5°	470.1	438.3	404.0	380.9	367.3	363.3
14°	470.2	437.4	402.0	378.3	364.3	360.2
14.5°	470.2	436.3	400.0	375.6	361.4	357.2
15°	470.2	435.3	398.0	373.0	358.5	354.2
15.5°	470.2	434.2	395.8	370.2	355.3	351.2
16°	470.1	433.1	393.7	367.5	352.5	348.3
16.5°	469.9	431.9	391.6	364.8	349.5	345.3
17°	469.7	430.6	389.3	362.1	346.6	342.3
17.5°	469.4	429.4	387.0	359.3	343.5	339.3
18°	469.1	428.1	384.8	356.6	340.6	336.3
18.5°	468.7	426.7	382.5	353.6	337.5	333.3
19°	468.2	425.3	380.2	350.9	334.6	330.4
19.5°	467.6	423.8	377.8	348.0	331.7	327.3
20°	467.0	422.2	375.5	345.3	328.7	324.4
20.5°	466.4	420.8	373.0	342.4	325.7	321.4
21°	465.6	419.1	370.5	339.4	322.7	318.4



TEST NUMBER: P775878

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	463.0	413.8	362.9	330.7	313.6	309.3
23°	461.9	412.0	360.2	327.9	310.5	306.2
23.5°	460.8	410.0	357.6	324.8	307.5	303.2
24°	459.5	408.2	355.0	321.9	304.4	300.1
24.5°	458.3	406.1	352.3	318.8	301.3	297.0
25°	456.9	404.0	349.5	315.9	298.2	293.8
25.5°	455.6	401.9	346.7	312.8	295.2	290.7
26°	454.0	399.8	344.0	309.8	292.0	287.5
26.5°	452.4	397.5	341.1	306.7	288.8	284.4
27°	450.7	395.1	338.3	303.7	285.6	281.0
27.5°	448.9	392.8	335.3	300.5	282.4	277.6
28°	447.0	390.4	332.4	297.4	279.0	274.4
28.5°	445.1	388.0	329.4	294.2	275.9	271.0
29°	443.2	385.4	326.5	291.2	272.5	267.6
29.5°	441.1	382.8	323.6	288.0	269.2	264.1
30°	438.8	380.2	320.5	284.9	265.9	260.6
30.5°	436.5	377.5	317.4	281.5	262.4	257.0
31°	434.2	374.7	314.3	278.4	258.9	253.4
31.5°	431.7	372.0	311.3	275.1	255.4	249.7
32°	429.3	369.0	308.0	271.9	251.8	245.9
32.5°	426.5	366.1	304.9	268.6	248.2	242.1
33°	423.8	363.1	301.6	265.2	244.6	238.4
33.5°	420.9	360.0	298.4	261.9	240.9	234.6
34°	417.7	356.8	295.1	258.5	237.2	230.8
34.5°	414.6	353.5	291.8	255.2	233.5	226.7
35°	411.2	350.3	288.5	251.7	229.6	222.8
35.5°	408.1	347.2	285.2	248.2	225.8	218.7
36°	405.1	344.3	281.9	244.9	221.9	214.8
36.5°	402.3	341.3	278.7	241.3	218.0	210.6
37°	399.3	338.4	275.4	237.7	214.1	206.6
37.5°	396.1	335.4	272.2	234.2	210.1	202.4
38°	392.4	332.3	268.9	230.7	206.1	198.4
38.5°	388.3	328.9	265.7	227.2	202.0	194.1
39°	383.6	325.2	262.5	223.5	198.0	190.2
39.5°	378.6	321.3	259.0	220.1	193.9	186.2
40°	373.4	316.9	255.5	216.3	189.9	182.4
40.5°	368.1	312.4	251.8	212.7	185.7	178.4
41°	362.7	307.9	248.0	209.0	181.7	174.9
41.5°	356.9	303.1	244.2	205.3	177.7	171.2
42°	351.1	298.2	240.1	201.5	173.8	167.8
42.5°	345.2	293.3	236.0	197.7	170.1	164.4
43°	339.3	288.3	231.8	193.8	166.4	160.9
43.5°	333.0	283.1	227.6	189.8	162.8	157.5



TEST NUMBER: P775878

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	314.2	267.3	214.3	177.6	152.3	147.9
45.5°	307.7	261.9	209.8	173.5	149.0	144.9
46°	301.2	256.6	205.2	169.2	145.5	141.8
46.5°	295.0	250.9	200.6	165.1	142.4	138.7
47°	288.3	245.5	196.0	160.8	139.2	135.8
47.5°	281.6	239.8	191.3	156.5	136.1	132.8
48°	275.1	234.4	186.6	152.2	132.9	130.0
48.5°	268.8	228.8	181.9	148.0	129.9	127.2
49°	262.1	223.3	177.3	143.8	126.8	124.4
49.5°	255.6	217.7	172.6	139.8	123.9	121.6
50°	249.1	212.1	167.8	135.7	121.0	118.9
50.5°	242.9	206.6	163.1	131.8	118.0	116.1
51°	236.1	201.1	158.7	127.8	115.2	113.5
51.5°	230.1	195.7	154.0	124.1	112.3	111.0
52°	223.6	190.1	149.4	120.3	109.6	108.3
52.5°	217.5	184.5	144.8	116.6	106.9	105.8
53°	211.3	179.3	140.3	113.0	104.2	103.3
53.5°	205.3	174.0	135.8	109.6	101.5	100.9
54°	199.1	168.7	131.5	106.1	98.9	98.4
54.5°	193.4	163.4	127.2	102.7	96.4	96.0
55°	187.5	158.5	122.8	99.4	93.8	93.6
55.5°	181.8	153.3	118.5	96.3	91.4	91.3
56°	176.0	148.4	114.5	93.1	89.0	89.1
56.5°	170.5	143.3	110.4	90.0	86.6	86.8
57°	165.0	138.5	106.5	87.0	84.2	84.6
57.5°	159.7	133.7	102.5	84.2	81.9	82.5
58°	154.4	129.2	98.8	81.4	79.7	80.3
58.5°	149.3	124.6	95.1	78.7	77.4	78.3
59°	144.1	120.1	91.5	76.1	75.3	76.3
59.5°	139.1	115.6	88.0	73.6	73.2	74.3
60°	134.3	111.4	84.6	71.1	71.1	72.3
60.5°	129.6	107.1	81.2	68.7	69.1	70.4
61°	124.8	103.1	78.0	66.4	67.2	68.5
61.5°	120.4	99.2	74.9	64.2	65.3	66.6
62°	115.9	95.2	71.9	62.1	63.4	64.8
62.5°	111.6	91.4	68.8	60.0	61.6	63.1
63°	107.3	87.6	66.0	58.0	59.8	61.4
63.5°	103.2	84.1	63.3	56.0	57.9	59.7
64°	99.1	80.5	60.6	54.2	56.3	58.0
64.5°	95.2	77.1	58.0	52.4	54.6	56.3
65°	91.6	73.8	55.6	50.7	53.0	54.5
65.5°	88.0	70.6	53.2	49.0	51.4	52.9
66°	84.3	67.4	50.9	47.4	49.8	51.2



TEST NUMBER: P775878

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	73.7	58.5	44.3	42.7	45.0	45.9
68°	70.4	55.7	42.4	41.2	43.3	44.3
68.5°	67.3	53.0	40.5	39.7	41.7	42.7
69°	64.2	50.4	38.6	38.4	40.1	41.0
69.5°	61.2	47.9	36.9	37.1	38.6	39.4
70°	58.2	45.4	35.2	35.7	37.1	37.6
70.5°	55.5	43.1	33.5	34.5	35.6	36.1
71°	52.8	40.8	31.8	33.1	34.2	34.7
71.5°	50.0	38.6	30.3	31.7	32.7	33.1
72°	47.5	36.6	28.8	30.5	31.2	31.6
72.5°	45.0	34.7	27.3	29.2	29.7	30.2
73°	42.6	32.7	25.9	28.0	28.3	28.7
73.5°	40.2	30.7	24.6	26.7	26.9	27.1
74°	38.0	28.7	23.3	25.5	25.5	25.6
74.5°	35.8	26.9	22.2	24.3	24.2	24.3
75°	33.7	25.2	21.0	23.1	22.8	22.8
75.5°	31.7	23.5	19.9	22.0	21.4	21.4
76°	29.7	22.0	18.8	20.8	20.2	20.1
76.5°	28.0	20.5	17.8	19.7	18.8	18.8
77°	26.1	19.0	16.8	18.5	17.7	17.5
77.5°	24.4	17.7	15.9	17.4	16.4	16.5
78°	22.7	16.3	15.0	16.3	15.3	15.6
78.5°	21.0	15.0	14.1	15.2	14.3	14.6
79°	19.5	13.8	13.1	14.3	13.3	13.7
79.5°	18.0	12.6	12.3	13.2	12.5	12.8
80°	16.5	11.5	11.5	12.2	11.6	11.9
80.5°	15.1	10.4	10.6	11.3	10.7	11.1
81°	13.9	9.5	9.8	10.4	9.9	10.3
81.5°	12.6	8.5	8.9	9.6	8.9	9.5
82°	11.3	7.6	8.2	8.7	8.1	8.6
82.5°	10.3	6.7	7.5	7.9	7.4	7.9
83°	9.4	6.0	6.7	7.1	6.5	7.0
83.5°	8.3	5.3	5.9	6.3	5.7	6.2
84°	7.3	4.5	5.3	5.6	4.9	5.5
84.5°	6.2	3.8	4.5	4.8	4.2	4.7
85°	5.1	3.3	3.8	4.1	3.6	4.0
85.5°	4.3	2.6	3.2	3.5	2.9	3.4
86°	3.5	2.1	2.5	2.8	2.3	2.7
86.5°	2.6	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	0.9	0.8	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: P775878

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-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°	315.4	322.4	341.7	375.1	427.7	476.5	511.5	531.0	535.2	525.3	501.5
22°	312.3	319.6	338.9	372.7	426.2	475.9	511.5	531.2	535.3	525.3	501.2



44°	154.3	162.7	193.0	237.0	303.1	357.7	384.1	388.8	382.6	373.0	356.0
44.5°	151.1	159.1	189.1	232.9	298.3	351.7	376.7	380.8	374.8	365.1	348.9



66.5°	49.4	50.7	50.5	55.3	77.6	93.6	99.3	99.3	95.7	93.7	89.4
67°	47.7	49.0	48.9	52.9	74.2	90.0	95.4	95.4	92.1	90.2	85.9



89°	0.1	0.3	0.5	0.7	0.8	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°	464.8	417.4	368.0	336.6	319.7	315.4
22°	463.9	415.6	365.5	333.7	316.6	312.3



44°	326.9	277.9	223.2	185.8	159.2	154.3
44.5°	320.3	272.6	218.7	181.8	155.7	151.1



66.5°	80.7	64.3	48.7	45.8	48.1	49.4
67°	77.0	61.3	46.4	44.2	46.6	47.7

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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)