

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: P775876

Luminaire Tested: HCDJBS510CSD-HCD8TRH-HCD8TRLWW-1000lm-3000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P775876
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-3000K
Description: 8 INCH ROUND MEDIUM LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

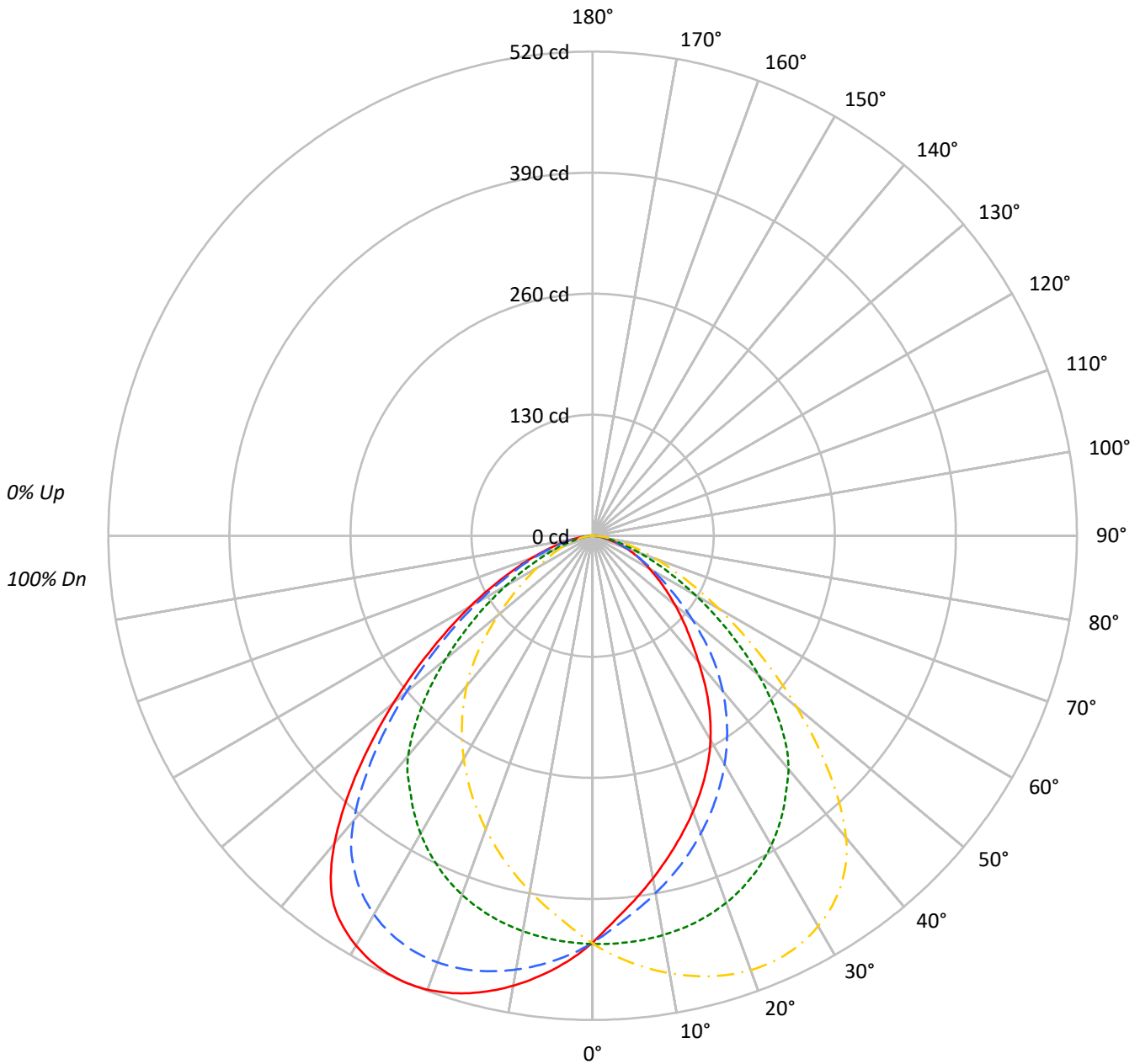
Lumens per Lamp: N/A
Luminaire Lumens: 1022.7 lumens
Efficiency: N/A
Efficacy: 102.3 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.27 / 1.32
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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					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	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°	13354	13354	13354	13354
5°	12357	13429	14303	13368
10°	11576	13501	15209	13368
15°	10876	13575	16075	13364
20°	10237	13626	16852	13327
25°	9614	13619	17483	13219
30°	8926	13527	17912	13019
35°	8065	13321	18050	12679
40°	7062	13044	17185	12271
45°	6200	12301	15375	11213
50°	5486	11048	13237	9784
55°	4844	9459	11162	8192
60°	4286	7779	9263	6607
65°	3829	6242	7571	5180
70°	3258	4838	6168	3937
75°	2619	3669	4978	2890
80°	2022	2708	3921	1952
85°	1366	1927	2487	1121

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 15638 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.5	4.1
10°-20°	120.2	11.8
20°-30°	184.0	18.0
30°-40°	217.8	21.3
40°-50°	200.0	19.6
50°-60°	139.9	13.7
60°-70°	78.4	7.7
70°-80°	33.8	3.3
80°-90°	7.1	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°	345.6	33.8
0°-40°	563.5	55.1
0°-60°	903.4	88.3
0°-90°	1022.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1022.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	437	437	437	437	437	
5°	403	438	467	436	403	38
15°	344	430	509	423	344	97
25°	285	404	519	392	285	131
35°	216	357	484	340	216	135
45°	144	285	356	260	144	111
55°	91	178	210	154	91	82
65°	53	86	105	72	53	52
75°	22	31	42	24	22	24
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°	437.4	437.4	437.4	437.4	437.4	437.4	437.4	437.4	437.4	437.4	437.4
0.5°	433.2	433.5	434.7	436.2	438.5	439.4	440.4	440.4	440.2	439.8	439.4
1°	429.8	430.4	432.2	434.9	438.5	440.8	442.7	443.4	443.5	442.9	441.7
1.5°	426.2	427.0	429.8	433.5	438.6	442.2	445.1	446.5	446.7	445.8	443.8
2°	422.5	423.7	427.2	432.2	438.6	443.4	447.3	449.4	449.8	448.6	446.1
2.5°	419.0	420.5	424.6	430.8	438.6	444.7	449.6	452.1	452.7	451.4	448.1
3°	415.7	417.3	422.2	429.4	438.6	446.0	451.6	454.9	455.7	454.0	450.2
3.5°	412.4	414.3	419.6	428.0	438.5	447.1	453.7	457.5	458.5	456.6	452.0
4°	409.3	411.4	417.3	426.5	438.4	448.2	455.8	460.2	461.3	459.1	453.9
4.5°	406.2	408.5	414.8	425.1	438.3	449.4	457.8	462.8	464.0	461.6	455.8
5°	403.2	405.7	412.5	423.5	438.2	450.5	459.8	465.3	466.7	464.0	457.6
5.5°	400.1	402.8	410.3	422.0	438.1	451.4	461.7	467.8	469.4	466.5	459.4
6°	397.2	400.0	407.9	420.6	437.9	452.4	463.5	470.2	471.9	468.8	461.1
6.5°	394.2	397.3	405.7	419.0	437.7	453.4	465.5	472.6	474.5	471.0	462.7
7°	391.2	394.5	403.4	417.5	437.5	454.4	467.2	474.9	476.9	473.2	464.4
7.5°	388.2	391.8	401.2	416.0	437.2	455.3	469.1	477.1	479.3	475.5	465.9
8°	385.2	388.9	398.9	414.4	436.9	456.1	470.7	479.4	481.7	477.6	467.4
8.5°	382.3	386.2	396.7	412.9	436.6	456.9	472.4	481.6	484.1	479.7	468.9
9°	379.3	383.4	394.3	411.3	436.3	457.7	474.0	483.6	486.3	481.6	470.4
9.5°	376.4	380.7	392.1	409.7	435.9	458.4	475.6	485.7	488.4	483.6	471.7
10°	373.4	377.8	389.7	408.2	435.5	459.3	477.0	487.8	490.6	485.5	473.0
10.5°	370.5	375.0	387.4	406.7	435.1	459.9	478.5	489.7	492.7	487.4	474.4
11°	367.5	372.3	385.0	405.0	434.5	460.5	480.1	491.6	494.8	489.2	475.6
11.5°	364.5	369.5	382.7	403.4	434.0	461.1	481.4	493.4	496.7	490.9	476.8
12°	361.6	366.7	380.2	401.8	433.5	461.7	482.7	495.3	498.6	492.6	477.9
12.5°	358.7	363.9	377.9	400.0	433.0	462.2	484.1	497.1	500.4	494.2	479.0
13°	355.7	361.2	375.5	398.3	432.4	462.7	485.3	498.8	502.2	495.8	480.0
13.5°	352.9	358.4	373.1	396.7	431.7	463.1	486.5	500.3	503.9	497.2	481.0
14°	349.9	355.5	370.6	394.8	431.0	463.4	487.6	501.9	505.5	498.7	481.9
14.5°	347.0	352.8	368.2	393.1	430.3	463.8	488.8	503.3	507.0	500.0	482.7
15°	344.1	349.9	365.7	391.2	429.5	464.2	489.8	504.8	508.6	501.3	483.5
15.5°	341.1	347.1	363.3	389.4	428.7	464.4	490.7	506.1	510.0	502.4	484.3
16°	338.3	344.3	360.7	387.5	427.9	464.6	491.6	507.4	511.3	503.6	484.9
16.5°	335.4	341.6	358.2	385.7	427.0	464.7	492.4	508.6	512.5	504.7	485.5
17°	332.5	338.7	355.7	383.6	426.1	464.8	493.2	509.7	513.7	505.6	486.0
17.5°	329.6	335.9	353.1	381.6	425.1	464.8	494.0	510.7	514.7	506.5	486.4
18°	326.7	333.1	350.5	379.5	424.0	464.8	494.6	511.6	515.7	507.3	486.8
18.5°	323.8	330.3	347.9	377.5	422.9	464.7	495.1	512.5	516.5	507.9	487.1
19°	320.9	327.5	345.3	375.3	421.8	464.6	495.6	513.4	517.3	508.7	487.3
19.5°	318.0	324.7	342.7	373.3	420.7	464.4	496.0	514.0	518.0	509.2	487.4
20°	315.1	321.8	340.0	371.1	419.4	464.0	496.3	514.6	518.7	509.6	487.5
20.5°	312.2	318.9	337.4	368.9	418.2	463.6	496.6	515.1	519.2	509.9	487.4
21°	309.3	316.0	334.6	366.7	416.8	463.2	496.7	515.5	519.6	510.2	487.3



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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°	300.4	307.5	326.5	359.7	412.6	461.7	496.8	516.1	520.2	510.3	486.5
23°	297.5	304.6	323.7	357.3	411.1	461.0	496.6	516.1	520.1	510.1	486.0
23.5°	294.5	301.7	321.0	354.9	409.4	460.3	496.3	516.0	520.0	509.9	485.5
24°	291.5	298.8	318.2	352.5	407.7	459.5	496.0	515.8	519.8	509.5	484.8
24.5°	288.5	295.7	315.4	349.9	406.1	458.5	495.6	515.5	519.4	509.0	484.1
25°	285.4	292.9	312.6	347.5	404.3	457.5	495.0	515.1	519.0	508.5	483.2
25.5°	282.3	289.8	309.8	344.9	402.6	456.5	494.4	514.6	518.5	507.7	482.3
26°	279.3	286.8	307.0	342.4	400.7	455.4	493.7	514.0	517.7	506.9	481.2
26.5°	276.2	283.8	304.1	339.7	398.7	454.0	492.8	513.3	516.9	506.0	480.1
27°	273.0	280.8	301.1	337.1	396.8	452.8	491.9	512.4	516.1	505.1	478.9
27.5°	269.7	277.7	298.3	334.4	394.7	451.4	490.9	511.5	515.1	504.0	477.5
28°	266.5	274.6	295.3	331.7	392.6	450.0	489.8	510.4	514.0	502.6	476.1
28.5°	263.3	271.4	292.4	328.9	390.5	448.4	488.5	509.3	512.7	501.4	474.7
29°	259.9	268.3	289.4	326.1	388.3	446.8	487.2	507.9	511.3	499.9	473.0
29.5°	256.5	265.0	286.4	323.4	386.0	445.1	485.8	506.6	509.8	498.3	471.3
30°	253.2	261.7	283.4	320.6	383.7	443.2	484.3	505.1	508.1	496.6	469.5
30.5°	249.7	258.4	280.3	317.7	381.4	441.4	482.6	503.3	506.4	494.9	467.5
31°	246.1	255.1	277.2	314.8	378.9	439.4	480.9	501.6	504.6	492.9	465.5
31.5°	242.5	251.6	274.1	312.0	376.4	437.3	479.1	499.8	502.6	490.9	463.3
32°	238.9	248.3	271.0	308.9	373.9	435.3	477.1	497.7	500.5	488.7	461.2
32.5°	235.2	244.8	267.9	306.0	371.4	433.0	475.1	495.7	498.3	486.4	458.7
33°	231.6	241.2	264.7	303.0	368.7	430.8	472.9	493.4	495.9	484.1	456.2
33.5°	227.8	237.6	261.5	300.0	366.0	428.3	470.6	491.0	493.3	481.3	453.5
34°	224.2	234.1	258.3	296.8	363.2	425.8	468.1	488.4	490.7	478.5	450.6
34.5°	220.2	230.4	255.0	293.8	360.3	423.2	465.7	485.8	487.7	475.3	447.4
35°	216.4	226.6	251.7	290.6	357.4	420.6	462.9	482.7	484.3	471.9	444.0
35.5°	212.4	222.9	248.4	287.5	354.4	417.6	460.0	479.5	480.7	468.0	440.5
36°	208.6	219.2	245.0	284.3	351.4	414.5	456.7	475.8	476.6	463.9	437.2
36.5°	204.6	215.4	241.7	281.0	348.2	411.5	453.2	471.7	472.2	459.8	433.8
37°	200.7	211.5	238.3	277.9	345.1	408.2	449.7	467.5	466.9	455.3	430.2
37.5°	196.6	207.6	234.8	274.5	342.0	405.3	446.3	462.9	462.0	450.1	425.9
38°	192.7	203.6	231.3	271.4	339.1	402.3	442.5	457.8	456.2	444.6	421.1
38.5°	188.5	199.8	227.8	268.2	336.1	399.5	438.3	452.4	450.5	438.8	415.9
39°	184.8	195.8	224.4	265.0	333.2	396.3	433.6	446.9	444.2	432.8	410.6
39.5°	180.9	191.8	220.8	261.8	330.3	392.7	428.8	441.0	437.9	426.6	404.8
40°	177.2	187.8	217.2	258.7	327.3	388.7	423.5	434.7	431.2	420.1	398.9
40.5°	173.3	183.8	213.5	255.4	323.9	384.1	417.9	428.3	424.2	413.3	392.7
41°	169.9	180.0	209.9	252.1	320.2	379.5	412.1	421.5	417.2	406.4	386.5
41.5°	166.3	176.1	206.3	248.8	316.3	374.6	406.1	414.6	409.8	399.3	379.9
42°	163.0	172.2	202.6	245.3	312.3	369.4	399.8	407.5	402.5	392.2	373.3
42.5°	159.7	168.5	199.0	241.7	308.1	364.3	393.4	400.1	395.0	384.7	366.7
43°	156.3	165.0	195.2	237.9	303.6	358.9	386.7	392.8	387.4	377.5	359.9
43.5°	153.0	161.4	191.4	234.1	299.1	353.3	379.8	385.2	379.6	369.7	352.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	143.6	151.3	179.7	222.0	284.9	335.6	358.9	362.2	356.1	347.0	331.8
45.5°	140.8	148.0	175.8	218.0	279.9	329.6	351.6	354.5	348.3	339.3	324.6
46°	137.7	144.7	171.7	213.8	275.0	323.3	344.4	346.7	340.3	331.7	317.5
46.5°	134.7	141.6	167.6	209.4	270.0	317.0	337.2	338.9	332.5	323.9	310.3
47°	131.9	138.5	163.5	205.1	264.8	310.5	329.7	330.9	324.5	316.2	303.2
47.5°	129.0	135.4	159.3	200.6	259.5	304.1	322.3	323.2	316.9	308.7	295.9
48°	126.3	132.4	155.2	196.2	254.2	297.6	315.0	315.6	309.1	301.2	288.9
48.5°	123.5	129.4	151.2	191.8	248.9	291.0	307.6	307.9	301.5	293.7	281.8
49°	120.9	126.5	147.1	187.2	243.6	284.5	300.2	300.3	293.6	286.3	274.9
49.5°	118.1	123.6	143.2	182.7	238.0	277.9	293.0	292.6	286.1	278.8	268.0
50°	115.5	120.8	139.2	178.2	232.6	271.3	285.7	285.0	278.7	271.5	260.9
50.5°	112.8	118.0	135.4	173.6	227.0	264.8	278.3	277.6	271.3	264.3	254.1
51°	110.2	115.1	131.7	169.0	221.5	258.1	271.0	270.1	264.0	257.2	247.2
51.5°	107.8	112.5	128.0	164.3	216.1	251.7	264.1	263.0	256.7	250.2	240.7
52°	105.2	109.7	124.3	159.9	210.5	245.2	257.0	255.7	249.8	243.3	234.0
52.5°	102.8	107.1	120.9	155.3	205.0	238.6	249.9	248.5	242.5	236.4	227.3
53°	100.3	104.4	117.3	150.7	199.5	232.1	242.9	241.5	235.9	229.8	220.9
53.5°	98.0	101.9	113.8	146.2	193.9	225.8	236.1	234.7	228.9	223.0	214.6
54°	95.5	99.3	110.3	141.7	188.4	219.4	229.5	227.9	222.4	216.5	208.2
54.5°	93.3	96.9	107.1	137.2	183.0	213.1	222.7	221.2	215.6	210.1	202.1
55°	91.0	94.4	103.8	132.8	177.7	207.0	216.1	214.7	209.7	204.1	196.1
55.5°	88.7	92.0	100.6	128.4	172.4	200.7	209.9	208.2	203.0	197.7	190.2
56°	86.6	89.6	97.5	124.0	167.1	194.7	203.3	201.9	197.1	191.6	184.3
56.5°	84.3	87.3	94.5	119.8	162.0	188.9	197.1	195.7	190.7	185.8	178.5
57°	82.2	84.8	91.5	115.8	156.7	182.9	191.0	189.7	185.2	180.0	172.8
57.5°	80.1	82.7	88.6	111.6	151.8	177.1	184.9	183.6	179.0	174.2	167.3
58°	78.0	80.4	85.8	107.6	146.7	171.4	179.0	177.8	173.6	168.6	162.0
58.5°	76.0	78.3	83.1	103.7	141.8	165.9	173.3	172.2	167.8	163.3	156.6
59°	74.1	76.2	80.4	99.8	136.9	160.4	167.6	166.6	162.6	158.0	151.5
59.5°	72.2	74.1	77.9	96.1	132.1	155.1	161.9	161.1	157.1	152.7	146.3
60°	70.2	72.1	75.3	92.4	127.4	149.7	156.4	155.8	151.7	147.7	141.4
60.5°	68.4	70.0	72.9	88.9	122.8	144.5	151.2	150.6	146.7	142.8	136.5
61°	66.6	68.1	70.4	85.3	118.4	139.4	146.1	145.5	141.3	137.9	131.7
61.5°	64.7	66.2	68.3	82.0	113.9	134.5	141.0	140.5	136.5	133.1	127.1
62°	63.0	64.4	66.0	78.8	109.6	129.7	136.0	135.7	131.7	128.4	122.6
62.5°	61.2	62.6	63.9	75.6	105.5	125.0	131.1	130.8	126.7	123.8	118.2
63°	59.6	60.7	61.9	72.6	101.5	120.2	126.4	126.1	122.3	119.3	113.8
63.5°	58.0	59.0	59.8	69.5	97.3	115.7	121.7	121.5	117.6	114.9	109.7
64°	56.3	57.4	57.9	66.7	93.7	111.3	117.3	117.1	113.1	110.7	105.5
64.5°	54.7	55.6	56.0	63.9	90.0	107.0	112.9	112.7	109.0	106.6	101.6
65°	53.0	54.0	54.3	61.2	86.4	102.9	108.6	108.5	104.8	102.6	97.8
65.5°	51.3	52.4	52.5	58.7	82.7	98.8	104.4	104.4	100.6	98.6	94.0
66°	49.7	50.7	50.7	56.1	79.0	94.7	100.4	100.4	96.8	94.7	90.2



TEST NUMBER: P775876

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	44.6	45.9	45.9	49.2	68.9	83.7	89.1	89.2	86.0	84.0	79.9
68°	43.1	44.4	44.4	47.0	65.7	80.1	85.6	85.7	82.4	80.5	76.5
68.5°	41.4	42.9	42.9	44.9	62.8	76.5	82.1	82.2	78.9	77.1	73.2
69°	39.8	41.3	41.3	42.8	59.7	73.1	78.6	78.7	75.3	73.9	70.0
69.5°	38.3	39.7	39.9	40.9	57.0	69.7	75.0	75.2	72.2	70.7	67.0
70°	36.5	38.2	38.5	39.1	54.2	66.5	71.8	72.1	69.1	67.7	63.9
70.5°	35.1	36.5	37.2	37.4	51.5	63.4	68.5	68.9	66.0	64.7	61.0
71°	33.7	35.1	35.8	35.7	48.9	60.5	65.5	65.9	63.1	61.8	58.3
71.5°	32.2	33.8	34.5	34.2	46.4	57.6	62.6	63.0	60.1	58.9	55.5
72°	30.7	32.4	33.2	32.6	44.0	54.7	59.6	60.0	57.4	56.1	52.9
72.5°	29.3	31.0	32.0	31.0	41.6	52.0	56.9	57.3	54.6	53.5	50.2
73°	27.9	29.6	30.6	29.4	39.4	49.3	54.0	54.6	52.0	50.8	47.8
73.5°	26.3	28.2	29.3	28.1	37.2	46.8	51.5	52.0	49.4	48.4	45.3
74°	24.9	26.8	28.1	26.7	35.1	44.3	48.9	49.5	47.0	45.9	43.0
74.5°	23.6	25.5	26.8	25.4	33.1	42.0	46.3	47.0	44.5	43.7	40.7
75°	22.2	24.1	25.6	24.2	31.1	39.6	43.9	44.6	42.2	41.3	38.5
75.5°	20.8	22.9	24.4	23.1	29.2	37.4	41.6	42.3	39.9	39.1	36.3
76°	19.5	21.5	23.3	21.9	27.5	35.2	39.3	40.0	37.7	36.9	34.2
76.5°	18.3	20.2	22.0	20.8	25.7	33.1	37.2	37.9	35.6	34.8	32.3
77°	17.0	19.0	20.9	19.8	24.1	31.1	35.0	35.7	33.5	32.8	30.3
77.5°	16.0	17.8	19.8	18.9	22.5	29.2	33.0	33.7	31.4	30.8	28.4
78°	15.1	16.6	18.7	17.9	20.9	27.3	30.9	31.7	29.5	28.9	26.5
78.5°	14.2	15.6	17.6	16.9	19.4	25.5	29.1	29.8	27.7	27.1	24.8
79°	13.3	14.6	16.5	15.9	18.1	23.8	27.2	28.0	25.7	25.2	23.2
79.5°	12.5	13.7	15.5	15.0	16.6	22.0	25.4	26.1	24.0	23.6	21.4
80°	11.5	12.9	14.5	14.1	15.4	20.5	23.7	24.3	22.3	21.8	19.8
80.5°	10.8	11.9	13.5	13.3	14.1	19.0	21.9	22.7	20.5	20.2	18.4
81°	10.0	11.1	12.6	12.4	13.1	17.5	20.4	21.0	18.9	18.6	16.8
81.5°	9.2	10.2	11.7	11.4	11.8	16.0	18.8	19.4	17.3	17.0	15.4
82°	8.4	9.4	10.8	10.6	10.8	14.7	17.4	17.9	15.7	15.6	14.0
82.5°	7.7	8.6	10.0	9.8	9.8	13.4	15.8	16.3	14.2	14.2	12.7
83°	6.8	7.8	9.2	9.0	8.9	12.1	14.5	14.9	12.8	12.8	11.4
83.5°	6.0	6.9	8.4	8.3	8.1	11.0	13.1	13.5	11.2	11.4	10.3
84°	5.3	6.2	7.6	7.5	7.2	10.0	11.8	12.1	9.9	10.2	9.2
84.5°	4.6	5.4	6.7	6.7	6.3	8.9	10.5	10.8	8.5	9.0	8.1
85°	3.9	4.7	5.9	5.9	5.5	7.9	9.5	9.6	7.1	7.8	6.9
85.5°	3.3	3.9	5.2	5.2	4.8	6.8	8.4	8.5	5.8	6.5	5.8
86°	2.7	3.3	4.4	4.5	4.1	5.8	7.2	7.3	4.4	5.3	4.7
86.5°	2.0	2.8	3.8	3.8	3.5	5.0	6.1	6.1	3.3	4.4	3.8
87°	1.5	2.1	3.1	3.2	2.9	4.1	5.0	5.0	2.7	3.5	2.9
87.5°	1.0	1.5	2.4	2.6	2.2	3.3	4.1	4.0	2.0	2.7	1.9
88°	0.6	1.0	1.7	1.8	1.7	2.6	3.1	3.1	1.4	1.7	1.1
88.5°	0.3	0.6	1.1	1.2	1.2	1.8	2.2	2.0	0.8	0.8	0.3



TEST NUMBER: P775876

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

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

TEST NUMBER: P775876

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	437.4	437.4	437.4	437.4	437.4	437.4
0.5°	438.6	438.3	436.7	435.3	433.9	433.2
1°	439.8	438.2	435.3	432.7	430.6	429.8
1.5°	440.9	438.0	433.7	430.1	427.2	426.2
2°	442.0	437.8	432.2	427.5	423.8	422.5
2.5°	443.1	437.6	430.7	424.7	420.6	419.0
3°	444.1	437.3	429.1	422.1	417.4	415.7
3.5°	445.1	437.1	427.5	419.4	414.3	412.4
4°	446.1	436.8	425.9	416.9	411.2	409.3
4.5°	447.0	436.5	424.2	414.3	408.2	406.2
5°	447.8	436.2	422.5	411.9	405.4	403.2
5.5°	448.6	435.8	420.9	409.3	402.5	400.1
6°	449.5	435.4	419.1	407.0	399.6	397.2
6.5°	450.2	435.0	417.5	404.5	396.8	394.2
7°	450.9	434.5	415.8	402.2	393.9	391.2
7.5°	451.6	434.0	414.0	399.7	391.1	388.2
8°	452.2	433.5	412.4	397.4	388.2	385.2
8.5°	452.8	433.0	410.6	394.9	385.3	382.3
9°	453.4	432.4	408.8	392.5	382.4	379.3
9.5°	453.9	431.8	407.1	390.0	379.6	376.4
10°	454.5	431.2	405.4	387.7	376.8	373.4
10.5°	454.9	430.5	403.5	385.1	373.9	370.5
11°	455.3	429.8	401.8	382.7	371.1	367.5
11.5°	455.6	429.0	399.9	380.1	368.2	364.5
12°	455.9	428.3	398.1	377.7	365.3	361.6
12.5°	456.2	427.5	396.2	375.1	362.5	358.7
13°	456.4	426.6	394.3	372.6	359.7	355.7
13.5°	456.6	425.8	392.4	370.0	356.8	352.9
14°	456.7	424.9	390.5	367.5	353.9	349.9
14.5°	456.7	423.8	388.5	364.8	351.0	347.0
15°	456.7	422.8	386.6	362.3	348.2	344.1
15.5°	456.7	421.8	384.4	359.6	345.1	341.1
16°	456.6	420.7	382.4	357.0	342.4	338.3
16.5°	456.5	419.5	380.3	354.3	339.5	335.4
17°	456.3	418.3	378.2	351.8	336.7	332.5
17.5°	456.0	417.1	376.0	349.0	333.7	329.6
18°	455.7	415.9	373.8	346.4	330.8	326.7
18.5°	455.3	414.4	371.6	343.5	327.9	323.8
19°	454.8	413.1	369.3	340.8	325.0	320.9
19.5°	454.3	411.7	367.0	338.1	322.2	318.0
20°	453.6	410.2	364.7	335.4	319.3	315.1
20.5°	453.0	408.7	362.3	332.6	316.3	312.2
21°	452.3	407.1	359.9	329.7	313.5	309.3

TEST NUMBER: P775876

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	449.8	402.0	352.5	321.2	304.6	300.4
23°	448.6	400.3	349.9	318.5	301.6	297.5
23.5°	447.6	398.3	347.4	315.5	298.7	294.5
24°	446.4	396.5	344.8	312.7	295.7	291.5
24.5°	445.2	394.4	342.2	309.7	292.7	288.5
25°	443.8	392.4	339.5	306.8	289.7	285.4
25.5°	442.5	390.3	336.8	303.9	286.7	282.3
26°	441.0	388.3	334.1	300.9	283.7	279.3
26.5°	439.4	386.2	331.3	298.0	280.5	276.2
27°	437.8	383.8	328.6	295.0	277.4	273.0
27.5°	436.1	381.6	325.7	291.9	274.3	269.7
28°	434.2	379.2	322.9	288.9	271.0	266.5
28.5°	432.4	376.9	320.0	285.8	268.0	263.3
29°	430.5	374.3	317.2	282.9	264.7	259.9
29.5°	428.4	371.9	314.3	279.8	261.5	256.5
30°	426.3	369.3	311.3	276.7	258.3	253.2
30.5°	424.0	366.7	308.3	273.5	254.9	249.7
31°	421.8	364.0	305.3	270.4	251.5	246.1
31.5°	419.3	361.4	302.4	267.2	248.1	242.5
32°	417.0	358.4	299.2	264.1	244.6	238.9
32.5°	414.3	355.6	296.1	260.9	241.1	235.2
33°	411.7	352.7	293.0	257.6	237.6	231.6
33.5°	408.8	349.7	289.9	254.4	234.0	227.8
34°	405.8	346.6	286.6	251.1	230.4	224.2
34.5°	402.7	343.4	283.5	247.8	226.8	220.2
35°	399.4	340.2	280.2	244.5	223.0	216.4
35.5°	396.4	337.3	277.0	241.1	219.4	212.4
36°	393.5	334.4	273.9	237.8	215.6	208.6
36.5°	390.8	331.6	270.7	234.4	211.7	204.6
37°	387.9	328.7	267.5	230.9	207.9	200.7
37.5°	384.7	325.8	264.4	227.5	204.1	196.6
38°	381.2	322.8	261.2	224.1	200.2	192.7
38.5°	377.2	319.5	258.1	220.7	196.2	188.5
39°	372.6	315.9	255.0	217.1	192.3	184.8
39.5°	367.8	312.1	251.6	213.8	188.3	180.9
40°	362.7	307.9	248.2	210.1	184.5	177.2
40.5°	357.6	303.5	244.6	206.6	180.4	173.3
41°	352.3	299.1	240.9	203.0	176.5	169.9
41.5°	346.7	294.4	237.2	199.5	172.6	166.3
42°	341.0	289.7	233.2	195.7	168.8	163.0
42.5°	335.3	284.9	229.3	192.0	165.3	159.7
43°	329.6	280.0	225.2	188.2	161.6	156.3
43.5°	323.5	275.0	221.1	184.4	158.1	153.0

TEST NUMBER: P775876

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	305.2	259.7	208.1	172.5	147.9	143.6
45.5°	298.9	254.4	203.7	168.5	144.7	140.8
46°	292.6	249.3	199.4	164.3	141.4	137.7
46.5°	286.5	243.8	194.9	160.4	138.3	134.7
47°	280.0	238.5	190.4	156.2	135.3	131.9
47.5°	273.6	232.9	185.8	152.0	132.2	129.0
48°	267.2	227.7	181.3	147.8	129.1	126.3
48.5°	261.1	222.2	176.7	143.7	126.2	123.5
49°	254.6	216.9	172.2	139.6	123.2	120.9
49.5°	248.3	211.5	167.6	135.8	120.4	118.1
50°	241.9	206.0	163.0	131.8	117.5	115.5
50.5°	235.9	200.7	158.4	128.0	114.6	112.8
51°	229.4	195.4	154.1	124.1	111.9	110.2
51.5°	223.6	190.1	149.5	120.6	109.1	107.8
52°	217.2	184.7	145.2	116.9	106.5	105.2
52.5°	211.3	179.3	140.7	113.3	103.8	102.8
53°	205.3	174.1	136.3	109.7	101.3	100.3
53.5°	199.5	169.0	131.9	106.5	98.6	98.0
54°	193.4	163.8	127.7	103.1	96.1	95.5
54.5°	187.8	158.7	123.5	99.7	93.6	93.3
55°	182.1	153.9	119.3	96.6	91.2	91.0
55.5°	176.6	148.9	115.1	93.5	88.8	88.7
56°	171.0	144.1	111.3	90.4	86.5	86.6
56.5°	165.6	139.2	107.3	87.4	84.1	84.3
57°	160.3	134.5	103.4	84.5	81.8	82.2
57.5°	155.2	129.8	99.5	81.8	79.5	80.1
58°	150.0	125.5	96.0	79.1	77.4	78.0
58.5°	145.1	121.1	92.4	76.5	75.2	76.0
59°	139.9	116.7	88.9	73.9	73.2	74.1
59.5°	135.2	112.3	85.4	71.5	71.1	72.2
60°	130.5	108.2	82.2	69.1	69.1	70.2
60.5°	125.9	104.0	78.9	66.8	67.2	68.4
61°	121.3	100.1	75.7	64.5	65.2	66.6
61.5°	117.0	96.4	72.8	62.4	63.4	64.7
62°	112.6	92.5	69.8	60.3	61.6	63.0
62.5°	108.4	88.8	66.9	58.3	59.8	61.2
63°	104.2	85.1	64.1	56.3	58.1	59.6
63.5°	100.2	81.7	61.5	54.4	56.2	58.0
64°	96.3	78.2	58.9	52.7	54.7	56.3
64.5°	92.5	74.9	56.3	50.9	53.1	54.7
65°	89.0	71.7	54.0	49.2	51.4	53.0
65.5°	85.4	68.6	51.7	47.6	49.9	51.3
66°	81.9	65.4	49.4	46.0	48.4	49.7



TEST NUMBER: P775876

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	71.6	56.9	43.1	41.4	43.7	44.6
68°	68.4	54.1	41.1	40.0	42.1	43.1
68.5°	65.3	51.4	39.3	38.6	40.5	41.4
69°	62.4	49.0	37.5	37.3	39.0	39.8
69.5°	59.4	46.5	35.8	36.0	37.5	38.3
70°	56.6	44.1	34.2	34.7	36.0	36.5
70.5°	53.9	41.9	32.6	33.5	34.6	35.1
71°	51.2	39.6	30.9	32.2	33.2	33.7
71.5°	48.6	37.5	29.4	30.8	31.7	32.2
72°	46.1	35.5	28.0	29.6	30.3	30.7
72.5°	43.7	33.7	26.5	28.4	28.9	29.3
73°	41.3	31.7	25.1	27.2	27.5	27.9
73.5°	39.1	29.8	23.9	25.9	26.1	26.3
74°	37.0	27.9	22.7	24.8	24.8	24.9
74.5°	34.8	26.1	21.5	23.6	23.5	23.6
75°	32.8	24.5	20.4	22.5	22.2	22.2
75.5°	30.8	22.9	19.3	21.3	20.8	20.8
76°	28.9	21.3	18.3	20.2	19.6	19.5
76.5°	27.2	19.9	17.3	19.1	18.3	18.3
77°	25.3	18.5	16.3	18.0	17.1	17.0
77.5°	23.7	17.1	15.4	16.9	15.9	16.0
78°	22.0	15.8	14.6	15.8	14.9	15.1
78.5°	20.4	14.6	13.7	14.8	13.9	14.2
79°	19.0	13.4	12.8	13.9	13.0	13.3
79.5°	17.5	12.2	11.9	12.9	12.1	12.5
80°	16.0	11.1	11.1	11.8	11.2	11.5
80.5°	14.7	10.1	10.3	11.0	10.4	10.8
81°	13.5	9.2	9.5	10.1	9.6	10.0
81.5°	12.2	8.3	8.7	9.3	8.7	9.2
82°	11.0	7.3	8.0	8.5	7.9	8.4
82.5°	10.0	6.5	7.2	7.7	7.1	7.7
83°	9.1	5.8	6.5	6.9	6.3	6.8
83.5°	8.1	5.1	5.7	6.1	5.5	6.0
84°	7.0	4.4	5.1	5.4	4.8	5.3
84.5°	6.0	3.7	4.4	4.7	4.1	4.6
85°	5.0	3.2	3.7	4.0	3.5	3.9
85.5°	4.2	2.6	3.1	3.4	2.9	3.3
86°	3.4	2.0	2.4	2.8	2.2	2.7
86.5°	2.6	1.4	1.8	2.0	1.7	2.0
87°	1.8	1.0	1.2	1.4	1.2	1.5
87.5°	1.2	0.5	0.7	0.9	0.8	1.0
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: P775876

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-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°	306.3	313.2	332.0	364.3	415.5	462.8	496.8	515.8	519.9	510.3	487.1
22°	303.4	310.4	329.2	362.1	414.0	462.3	496.8	516.0	520.0	510.3	486.8



44°	149.9	158.0	187.5	230.2	294.4	347.5	373.1	377.7	371.7	362.3	345.8
44.5°	146.8	154.5	183.6	226.2	289.8	341.7	366.0	369.9	364.1	354.6	338.9



66.5°	48.0	49.2	49.1	53.7	75.3	91.0	96.5	96.5	93.0	91.1	86.9
67°	46.3	47.6	47.5	51.3	72.1	87.4	92.7	92.7	89.4	87.6	83.4



89°	0.1	0.3	0.5	0.7	0.8	1.1	1.3	1.0	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°	451.5	405.5	357.5	327.0	310.5	306.3
22°	450.6	403.7	355.0	324.1	307.6	303.4



44°	317.6	269.9	216.8	180.5	154.6	149.9
44.5°	311.1	264.8	212.4	176.6	151.3	146.8

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66.5°	78.4	62.5	47.3	44.5	46.8	48.0
67°	74.8	59.5	45.1	43.0	45.2	46.3

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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)