

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: P775650

Luminaire Tested: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-2700K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P775650  
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-2700K  
Description: 4 INCH ROUND NARROW LENSED WALLWASH KIT  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

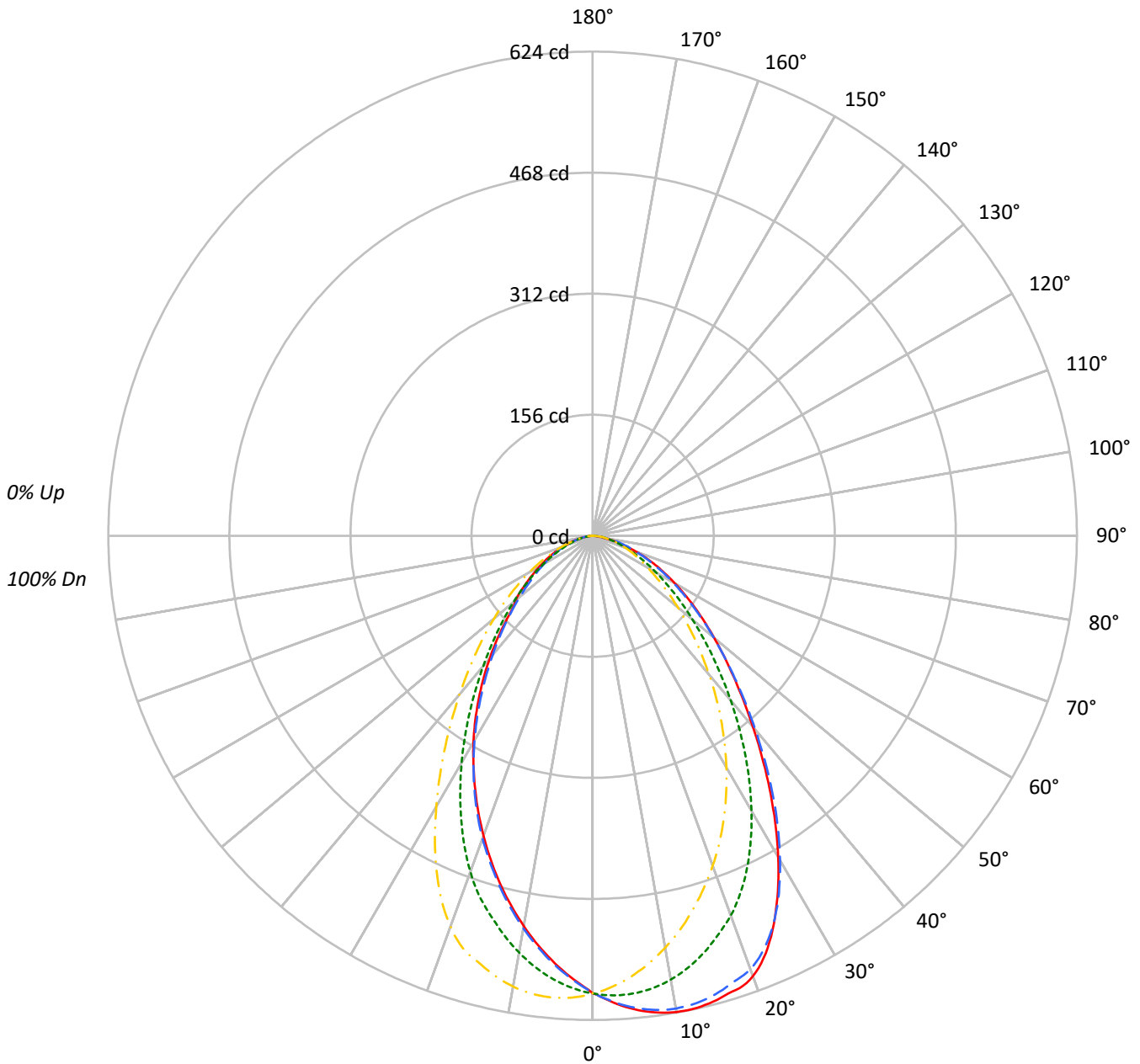
Lumens per Lamp: N/A  
Luminaire Lumens: 979.0 lumens  
Efficiency: N/A  
Efficacy: 97.9 lumens/watt  
Spacing Criteria (0/90/45): 1.05 / 1.01 / 1.07  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 10  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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



TEST NUMBER: P775650  
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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				100															
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88				88															
2	103	96	90	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77				77															
3	95	86	79	74	93	85	78	73	82	77	72	79	75	71	77	73	70	68				68															
4	88	78	71	65	86	77	70	64	74	68	64	72	67	63	70	66	62	60				60															
5	82	71	63	57	80	70	63	57	68	62	57	66	60	56	64	59	56	54				54															
6	77	65	57	51	75	64	57	51	62	56	51	61	55	50	59	54	50	48				48															
7	72	60	52	47	70	59	52	46	58	51	46	56	50	46	55	50	45	44				44															
8	67	55	48	42	66	55	47	42	53	47	42	52	46	42	51	46	42	40				40															
9	63	51	44	39	62	51	44	39	50	43	38	49	43	38	48	42	38	36				36															
10	60	48	40	36	58	47	40	36	46	40	35	45	39	35	44	39	35	34				34															

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	74188	74188	74188	74188
5°	77377	74826	69924	72514
10°	79639	74221	65276	69710
15°	80675	72402	60298	66044
20°	80892	69749	55057	61687
25°	76678	65431	49795	55697
30°	69506	59464	44598	49045
35°	61070	52604	39284	42296
40°	52768	45458	33876	36011
45°	45723	38746	28619	30648
50°	39999	32892	25257	26059
55°	35150	27953	22446	22051
60°	30733	23760	19784	18475
65°	26622	20190	17420	15366
70°	21746	17037	14718	12658
75°	16289	14442	11913	10503
80°	9784	12610	8479	8335
85°	3754	11696	3032	4909

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 46933 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	55.1	5.6
10°-20°	150.7	15.4
20°-30°	204.2	20.9
30°-40°	198.4	20.3
40°-50°	157.1	16.0
50°-60°	110.0	11.2
60°-70°	66.7	6.8
70°-80°	30.6	3.1
80°-90°	6.2	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°	410.0	41.9
0°-40°	608.4	62.1
0°-60°	875.5	89.4
0°-90°	979.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	979.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	590	590	590	590	590	
5°	612	592	554	574	612	59
15°	619	556	463	507	619	175
25°	552	471	359	401	552	252
35°	398	342	256	275	398	248
45°	257	218	161	172	257	199
55°	160	127	102	100	160	144
65°	89	68	58	52	89	89
75°	34	30	24	22	34	36
85°	3	8	2	3	3	4
90°	0	1	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	589.5	589.5	589.5	589.5	589.5	589.5	589.5	589.5	589.5	589.5	589.5
0.5°	591.3	591.6	591.4	591.1	590.8	589.7	588.9	588.6	585.3	585.2	585.8
1°	594.1	594.5	594.2	593.0	591.5	589.2	587.3	586.0	582.1	582.1	582.9
1.5°	596.8	597.3	596.5	594.6	592.1	588.7	585.6	583.5	578.8	578.6	579.8
2°	599.4	600.1	598.8	596.3	592.5	587.9	583.8	580.7	575.5	575.1	576.5
2.5°	601.9	602.8	601.1	597.8	592.9	587.1	581.8	578.0	572.0	571.6	573.2
3°	604.3	605.2	603.3	599.1	593.0	586.0	579.7	574.9	568.4	568.0	569.9
3.5°	606.6	607.6	605.2	600.3	593.1	584.9	577.5	572.0	564.8	564.2	566.4
4°	608.7	609.8	607.1	601.3	592.9	583.6	575.2	568.8	561.2	560.4	562.9
4.5°	610.7	611.9	608.8	602.2	592.7	582.3	572.8	565.5	557.3	556.5	559.2
5°	612.5	614.0	610.4	603.0	592.3	580.7	570.2	562.2	553.5	552.5	555.6
5.5°	614.2	615.9	611.9	603.6	591.8	579.1	567.6	558.8	549.4	548.4	551.6
6°	615.8	617.6	613.2	604.2	591.1	577.2	564.7	555.2	545.5	544.2	547.8
6.5°	617.2	619.2	614.4	604.6	590.3	575.4	561.9	551.6	541.4	540.1	543.7
7°	618.5	620.6	615.4	604.8	589.4	573.3	558.9	548.0	537.2	535.8	539.5
7.5°	619.7	621.9	616.3	604.8	588.2	571.2	555.9	544.2	533.0	531.4	535.4
8°	620.6	623.0	617.1	604.8	587.0	568.9	552.7	540.3	528.7	526.9	531.2
8.5°	621.5	624.0	617.7	604.6	585.7	566.6	549.4	536.3	524.3	522.6	527.0
9°	622.2	624.9	618.2	604.2	584.2	564.0	546.0	532.4	519.9	518.0	522.6
9.5°	622.8	625.6	618.4	603.6	582.6	561.4	542.6	528.3	515.3	513.4	518.1
10°	623.2	626.1	618.6	602.9	580.8	558.6	539.1	524.3	510.8	508.8	513.6
10.5°	623.4	626.5	618.5	602.1	578.9	555.8	535.4	520.0	506.2	504.1	509.1
11°	623.5	626.7	618.4	601.2	576.8	552.8	531.6	515.7	501.6	499.4	504.5
11.5°	623.5	626.8	618.1	600.0	574.6	549.8	527.9	511.4	496.9	494.6	499.8
12°	623.3	626.8	617.6	598.8	572.3	546.6	524.0	507.1	492.2	489.8	495.0
12.5°	623.0	626.6	617.0	597.4	569.8	543.2	520.0	502.6	487.4	484.8	490.3
13°	622.5	626.2	616.2	595.9	567.3	539.9	516.0	498.1	482.6	480.0	485.6
13.5°	621.8	625.8	615.4	594.2	564.6	536.5	511.9	493.5	477.7	475.0	480.7
14°	621.1	625.0	614.3	592.2	561.8	532.8	507.6	488.9	472.8	469.9	475.8
14.5°	620.2	624.2	613.1	590.2	558.8	529.1	503.3	484.2	467.8	465.0	470.8
15°	619.2	623.3	611.7	588.1	555.7	525.2	499.0	479.5	462.8	459.8	465.8
15.5°	617.9	622.1	610.2	585.9	552.6	521.4	494.6	474.7	457.8	454.8	460.7
16°	616.5	620.9	608.5	583.5	549.2	517.4	490.0	469.9	452.8	449.7	455.7
16.5°	615.4	619.5	606.7	581.0	545.8	513.4	485.5	465.0	447.7	444.6	450.6
17°	614.5	618.2	604.9	578.4	542.2	509.2	481.0	460.2	442.6	439.2	445.6
17.5°	613.7	617.3	603.0	575.5	538.7	505.0	476.3	455.2	437.4	434.0	440.5
18°	612.9	616.5	601.5	572.9	535.1	500.7	471.5	450.2	432.2	428.8	435.3
18.5°	611.4	615.6	600.1	570.3	531.6	496.5	466.8	445.2	426.9	423.5	430.2
19°	609.5	614.3	598.7	567.9	528.1	492.2	462.0	440.2	421.7	418.3	425.2
19.5°	606.9	612.3	596.9	565.4	524.6	488.0	457.4	435.2	416.4	413.1	420.1
20°	604.0	609.9	594.5	562.6	520.8	483.5	452.4	430.2	411.1	407.8	414.9
20.5°	600.7	607.0	591.6	559.3	516.6	479.1	447.7	424.9	405.8	402.5	409.6
21°	596.8	603.8	588.2	555.9	512.1	474.2	442.6	419.7	400.7	397.3	404.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	582.6	591.6	576.6	543.1	498.1	459.3	427.4	404.2	384.8	381.5	388.1
23°	577.0	586.7	572.2	538.6	492.9	454.1	422.1	398.9	379.5	376.3	382.6
23.5°	571.2	581.6	567.4	533.8	487.8	448.9	416.9	393.7	374.4	371.0	377.0
24°	565.2	576.1	562.5	528.7	482.4	443.3	411.5	388.5	369.1	365.8	371.5
24.5°	558.8	570.2	557.1	523.3	476.9	437.8	406.1	383.1	363.8	360.5	366.0
25°	552.2	564.0	551.5	517.8	471.2	432.2	400.5	377.8	358.6	355.3	360.5
25.5°	545.5	557.5	545.5	512.2	465.5	426.4	395.1	372.5	353.4	349.9	354.8
26°	538.6	550.9	539.4	506.3	459.7	420.7	389.7	367.2	348.3	344.5	349.2
26.5°	531.4	544.2	533.1	500.4	453.7	414.8	384.1	361.8	343.0	339.3	343.6
27°	524.3	537.1	526.5	494.2	447.5	408.9	378.5	356.4	337.9	334.0	338.0
27.5°	517.0	529.9	519.7	487.9	441.4	403.1	372.8	351.1	332.6	328.7	332.3
28°	509.3	522.4	512.5	481.3	435.1	397.3	367.2	345.8	327.5	323.4	326.6
28.5°	501.7	514.8	505.1	474.7	428.9	391.2	361.6	340.3	322.4	318.1	321.0
29°	494.0	507.2	497.9	468.0	422.3	385.1	355.9	334.9	317.3	312.8	315.4
29.5°	486.1	499.5	490.6	461.0	415.8	379.2	350.3	329.6	312.1	307.6	309.8
30°	478.3	491.5	483.0	454.2	409.2	373.1	344.5	324.3	306.9	302.3	304.1
30.5°	470.3	483.6	475.2	447.1	402.6	366.9	338.8	318.9	301.7	297.1	298.6
31°	462.2	475.5	467.4	439.8	396.2	360.9	333.2	313.5	296.6	291.8	293.1
31.5°	454.3	467.3	459.6	432.6	389.4	354.7	327.5	308.2	291.5	286.5	287.7
32°	446.1	459.0	451.6	425.0	382.7	348.7	321.9	302.9	286.4	281.4	282.2
32.5°	437.9	450.7	443.6	417.6	376.0	342.6	316.1	297.6	281.2	276.2	276.6
33°	429.8	442.5	435.7	410.2	369.2	336.4	310.5	292.4	276.1	271.0	271.1
33.5°	421.5	434.3	427.9	402.7	362.6	330.3	304.9	286.9	271.0	265.8	265.9
34°	413.5	425.9	419.8	395.1	355.8	324.0	299.3	281.7	265.9	260.6	260.4
34.5°	405.5	417.5	411.7	387.6	349.0	317.9	293.7	276.5	260.7	255.5	255.1
35°	397.5	409.3	403.6	380.1	342.4	311.9	288.0	271.3	255.7	250.5	249.7
35.5°	389.5	401.2	395.6	372.7	335.6	305.8	282.6	266.0	250.7	245.5	244.6
36°	381.4	393.1	387.7	365.3	328.9	299.7	277.1	260.9	245.6	240.5	239.4
36.5°	373.7	385.1	379.8	357.8	322.1	293.6	271.5	255.8	240.6	235.5	234.3
37°	365.8	376.9	371.9	350.6	315.7	287.8	265.9	250.7	235.5	230.5	229.2
37.5°	358.2	368.9	364.2	343.3	308.9	281.7	260.4	245.6	230.7	225.7	224.2
38°	350.5	361.1	356.2	335.8	302.5	275.8	255.1	240.7	225.7	220.8	219.2
38.5°	343.1	353.3	348.6	328.8	296.0	269.9	249.5	235.6	220.8	215.9	214.5
39°	335.7	345.6	340.9	321.5	289.6	264.2	244.1	230.7	216.0	211.1	209.6
39.5°	328.5	338.1	333.7	314.7	283.0	258.3	238.7	225.7	211.1	206.4	204.8
40°	321.2	330.7	326.2	307.4	276.7	252.5	233.5	220.8	206.2	201.6	200.1
40.5°	314.3	323.5	318.9	300.8	270.5	246.6	228.2	215.7	201.5	196.9	195.6
41°	307.4	316.1	311.7	293.9	264.2	241.2	223.1	210.9	196.8	192.3	191.0
41.5°	300.5	309.3	304.7	287.1	258.0	235.4	218.0	206.0	192.1	187.7	186.6
42°	293.9	302.3	297.7	280.3	252.1	229.9	213.0	201.4	187.4	183.3	182.4
42.5°	287.5	295.5	291.0	274.1	246.2	224.6	208.0	196.6	182.9	179.0	178.2
43°	281.1	289.0	284.4	267.7	240.3	219.3	203.2	192.0	178.3	174.7	173.9
43.5°	274.9	282.5	277.7	261.4	234.5	214.0	198.3	187.3	173.8	170.6	169.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	256.9	263.7	258.8	243.0	217.7	198.9	184.3	174.2	160.8	158.9	157.8
45.5°	251.1	257.8	252.7	237.1	212.3	194.0	179.9	170.1	156.6	155.2	154.0
46°	245.5	252.0	246.8	231.4	207.0	189.3	175.5	166.0	152.6	151.4	150.2
46.5°	240.0	246.2	240.9	225.7	201.8	184.5	171.3	161.9	148.7	147.7	146.4
47°	234.6	240.5	235.3	220.1	196.6	179.8	167.0	157.9	145.0	144.2	142.6
47.5°	229.4	235.0	229.6	214.7	191.6	175.3	162.8	154.0	141.4	140.7	139.0
48°	224.1	229.5	224.0	209.1	186.6	170.7	158.7	150.2	138.3	137.3	135.6
48.5°	218.9	224.3	218.7	204.0	181.8	166.4	154.6	146.4	135.6	134.0	132.1
49°	214.0	219.1	213.4	198.9	177.1	162.1	150.7	142.7	133.2	130.8	128.8
49.5°	209.1	214.0	208.3	193.9	172.5	157.9	146.7	139.1	131.0	127.8	125.5
50°	204.3	209.1	203.3	188.9	168.0	153.8	142.9	135.6	129.0	125.0	122.3
50.5°	199.6	204.1	198.2	184.0	163.5	149.7	139.1	132.2	127.0	122.2	119.0
51°	194.9	199.3	193.3	179.3	159.1	145.8	135.4	128.9	124.7	119.7	116.0
51.5°	190.3	194.6	188.6	174.7	155.0	141.9	131.9	125.7	122.0	117.4	113.1
52°	185.8	189.9	183.9	170.0	150.8	138.1	128.3	122.6	119.0	114.7	110.1
52.5°	181.4	185.3	179.3	165.6	146.7	134.4	124.9	119.6	116.1	112.0	107.2
53°	177.1	180.9	174.7	161.3	142.6	130.7	121.5	116.8	113.3	109.3	104.4
53.5°	172.7	176.4	170.3	156.9	138.7	127.1	118.2	113.9	110.4	106.6	101.6
54°	168.5	172.1	165.9	152.7	134.9	123.6	115.0	111.3	107.6	104.0	98.9
54.5°	164.3	167.7	161.5	148.6	131.0	120.2	111.8	108.9	105.0	101.4	96.3
55°	160.2	163.6	157.5	144.5	127.4	116.9	108.8	106.4	102.3	99.0	93.8
55.5°	156.1	159.4	153.3	140.5	123.8	113.5	105.8	103.9	99.8	96.3	91.3
56°	152.1	155.3	149.2	136.5	120.3	110.2	102.8	101.3	97.2	93.8	88.9
56.5°	148.2	151.3	145.2	132.7	116.9	107.1	99.9	98.8	94.7	91.5	86.7
57°	144.4	147.4	141.2	129.0	113.4	103.9	97.1	96.3	92.2	89.2	84.5
57.5°	140.3	143.4	137.4	125.3	110.1	100.9	94.4	93.9	89.9	86.8	82.4
58°	136.6	139.4	133.5	121.7	106.8	97.9	91.8	91.5	87.5	84.6	80.2
58.5°	132.9	135.6	129.8	118.1	103.8	95.0	89.2	89.1	85.3	82.4	78.1
59°	129.2	132.0	126.2	114.6	100.6	92.1	86.7	86.8	83.0	80.2	75.9
59.5°	125.6	128.1	122.5	111.2	97.5	89.3	84.4	84.6	80.8	78.0	73.9
60°	122.1	124.7	119.0	107.9	94.4	86.6	82.1	82.4	78.6	75.8	71.9
60.5°	118.6	121.1	115.5	104.5	91.6	84.1	79.8	80.2	76.4	73.7	69.9
61°	115.1	117.6	112.1	101.4	88.7	81.5	77.5	78.0	74.3	71.7	67.9
61.5°	111.7	114.0	108.6	98.2	86.0	78.9	75.2	75.8	72.2	69.6	66.0
62°	108.4	110.8	105.4	95.1	83.3	76.3	73.2	73.7	70.2	67.6	64.1
62.5°	105.2	107.4	102.2	92.1	80.6	73.8	71.1	71.7	68.1	65.6	62.2
63°	101.9	104.1	98.9	89.1	77.9	71.4	69.1	69.6	66.2	63.8	60.3
63.5°	98.7	100.8	95.8	86.2	75.2	69.1	67.1	67.6	64.2	61.8	58.5
64°	95.6	97.6	92.7	83.3	72.6	66.8	65.3	65.6	62.3	60.0	56.7
64.5°	92.5	94.5	89.7	80.5	70.2	64.6	63.4	63.7	60.4	58.1	55.0
65°	89.4	91.5	86.7	77.7	67.8	62.4	61.6	61.9	58.5	56.3	53.2
65.5°	86.3	88.3	83.7	75.1	65.4	60.3	59.7	60.0	56.5	54.5	51.5
66°	83.1	85.4	80.9	72.5	63.1	58.2	58.0	58.1	54.6	52.7	49.9





TEST NUMBER: P775650

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	73.9	76.5	72.5	64.8	56.5	52.4	52.7	52.7	48.9	47.4	45.0
68°	70.9	73.6	69.8	62.4	54.4	50.5	51.1	50.9	47.1	45.7	43.4
68.5°	67.8	70.7	67.2	60.1	52.3	48.7	49.4	49.1	45.3	43.9	41.9
69°	64.9	67.8	64.7	57.7	50.3	46.9	47.8	47.4	43.5	42.3	40.4
69.5°	62.0	65.0	62.2	55.5	48.3	45.3	46.1	45.6	41.7	40.6	38.9
70°	59.1	62.2	59.7	53.2	46.3	43.6	44.6	43.9	40.0	39.0	37.4
70.5°	56.4	59.5	57.3	51.0	44.4	42.0	43.0	42.3	38.4	37.4	36.0
71°	53.6	56.9	54.9	48.9	42.6	40.5	41.5	40.6	36.7	35.7	34.5
71.5°	50.9	54.2	52.6	46.8	40.8	39.0	40.0	39.0	35.1	34.2	33.1
72°	48.2	51.7	50.4	44.8	39.1	37.5	38.5	37.4	33.5	32.7	31.7
72.5°	45.7	49.3	48.1	42.9	37.4	36.1	37.1	35.8	31.9	31.1	30.3
73°	43.2	46.8	45.9	41.0	35.8	34.6	35.6	34.3	30.3	29.7	29.0
73.5°	40.6	44.5	43.8	39.0	34.2	33.3	34.2	32.7	28.8	28.2	27.7
74°	38.2	42.1	41.6	37.2	32.7	32.0	32.8	31.3	27.3	26.7	26.4
74.5°	35.7	39.8	39.6	35.9	31.2	30.7	31.5	29.8	25.9	25.3	25.0
75°	33.5	37.6	37.6	34.2	29.7	29.4	30.1	28.4	24.5	23.9	23.8
75.5°	31.3	35.4	35.5	32.5	28.3	28.2	28.8	27.0	23.1	22.6	22.5
76°	29.1	33.5	33.7	30.7	27.0	27.0	27.5	25.6	21.7	21.2	21.3
76.5°	26.9	31.5	31.9	29.0	25.6	25.8	26.2	24.2	20.3	19.9	20.1
77°	24.8	29.5	30.2	27.4	24.4	24.6	24.9	22.9	19.0	18.6	18.9
77.5°	22.7	27.5	28.4	25.9	23.1	23.5	23.6	21.6	17.7	17.4	17.8
78°	20.7	25.6	26.6	24.5	21.9	22.4	22.5	20.3	16.5	16.1	16.7
78.5°	18.8	23.9	24.9	23.1	20.7	21.2	21.2	19.0	15.2	14.9	15.5
79°	16.9	22.1	23.3	21.7	19.5	20.1	20.1	17.7	14.0	13.7	14.4
79.5°	15.2	20.4	21.7	20.3	18.4	19.1	18.9	16.5	12.8	12.6	13.4
80°	13.5	18.7	20.1	19.0	17.4	18.0	17.8	15.3	11.7	11.4	12.3
80.5°	12.0	17.2	18.6	17.8	16.3	17.0	16.7	14.2	10.5	10.3	11.3
81°	10.5	15.7	17.2	16.6	15.3	16.0	15.6	13.0	9.5	9.3	10.3
81.5°	9.1	14.3	15.8	15.4	14.3	15.0	14.5	11.9	8.4	8.3	9.4
82°	7.7	12.9	14.4	14.3	13.3	14.0	13.5	10.8	7.4	7.3	8.5
82.5°	6.4	11.5	13.1	13.2	12.4	13.0	12.4	9.8	6.3	6.3	7.6
83°	5.3	10.2	11.9	12.1	11.5	12.1	11.4	8.8	5.2	5.3	6.7
83.5°	4.3	9.0	10.7	11.1	10.6	11.2	10.5	7.8	4.3	4.5	5.8
84°	3.5	7.7	9.6	10.1	9.7	10.2	9.6	6.8	3.4	3.8	5.0
84.5°	3.0	6.6	8.5	9.2	8.9	9.4	8.7	5.8	2.6	3.2	4.3
85°	2.6	5.5	7.5	8.3	8.1	8.5	7.9	5.0	2.1	2.7	3.5
85.5°	2.1	4.5	6.6	7.4	7.3	7.7	7.0	4.3	1.8	2.2	2.8
86°	1.7	3.6	5.7	6.6	6.5	6.8	6.1	3.7	1.5	1.8	2.0
86.5°	1.4	3.0	4.9	5.7	5.7	5.9	5.3	3.2	1.2	1.3	1.4
87°	1.2	2.4	4.1	5.0	5.0	5.1	4.5	2.6	0.9	0.9	0.8
87.5°	0.9	1.8	3.5	4.3	4.3	4.3	3.7	2.1	0.6	0.5	0.3
88°	0.7	1.2	2.9	3.6	3.5	3.6	3.0	1.6	0.4	0.2	0.1
88.5°	0.5	0.8	2.2	2.9	2.8	2.8	2.3	1.1	0.1	0.1	0.0



TEST NUMBER: P775650

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

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



TEST NUMBER: P775650

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	589.5	589.5	589.5	589.5	589.5	589.5
0.5°	586.8	589.0	590.1	591.7	593.2	591.3
1°	584.6	587.8	590.2	592.8	595.3	594.1
1.5°	582.2	586.5	590.1	593.9	597.3	596.8
2°	579.8	585.2	589.8	594.8	599.2	599.4
2.5°	577.2	583.6	589.5	595.6	601.0	601.9
3°	574.5	582.0	588.9	596.2	602.6	604.3
3.5°	571.6	580.2	588.3	596.8	604.1	606.6
4°	568.7	578.3	587.4	597.1	605.3	608.7
4.5°	565.7	576.2	586.5	597.3	606.5	610.7
5°	562.5	574.0	585.4	597.4	607.7	612.5
5.5°	559.2	571.8	584.1	597.3	608.6	614.2
6°	555.9	569.3	582.8	597.1	609.3	615.8
6.5°	552.5	566.7	581.3	596.7	609.9	617.2
7°	548.8	564.0	579.6	596.1	610.4	618.5
7.5°	545.2	561.2	577.8	595.4	610.8	619.7
8°	541.5	558.4	575.9	594.6	610.9	620.6
8.5°	537.6	555.3	573.8	593.7	610.9	621.5
9°	533.7	552.1	571.6	592.6	610.8	622.2
9.5°	529.6	548.8	569.3	591.3	610.6	622.8
10°	525.5	545.5	566.9	589.9	610.2	623.2
10.5°	521.3	542.0	564.4	588.4	609.7	623.4
11°	517.1	538.5	561.6	586.7	609.0	623.5
11.5°	512.8	534.8	558.7	584.9	608.1	623.5
12°	508.4	530.9	555.9	583.0	607.1	623.3
12.5°	504.0	527.1	552.9	580.9	606.0	623.0
13°	499.5	523.2	549.7	578.7	604.8	622.5
13.5°	494.8	519.2	546.4	576.5	603.4	621.8
14°	490.1	515.0	543.0	573.9	601.8	621.1
14.5°	485.4	511.0	539.8	571.4	600.3	620.2
15°	480.9	506.9	536.4	569.0	598.4	619.2
15.5°	476.2	502.9	533.3	566.9	596.9	617.9
16°	471.6	498.8	530.2	565.0	595.7	616.5
16.5°	466.9	494.8	527.1	562.8	594.5	615.4
17°	462.2	490.7	523.5	560.2	593.1	614.5
17.5°	457.4	486.3	519.4	556.9	591.2	613.7
18°	452.6	481.6	515.0	553.4	588.5	612.9
18.5°	447.6	476.7	510.3	549.4	585.3	611.4
19°	442.4	471.4	505.4	545.2	581.7	609.5
19.5°	437.1	466.1	500.4	540.6	578.0	606.9
20°	431.7	460.6	495.3	535.8	573.7	604.0
20.5°	426.0	455.2	489.8	530.8	569.3	600.7
21°	420.5	449.4	484.2	525.4	564.4	596.8

TEST NUMBER: P775650

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	403.3	431.9	466.9	508.3	548.0	582.6
23°	397.5	425.8	460.8	502.3	541.9	577.0
23.5°	391.5	419.7	454.5	495.9	535.6	571.2
24°	385.6	413.5	448.3	489.5	528.9	565.2
24.5°	379.6	407.3	441.8	482.7	522.2	558.8
25°	373.7	401.1	435.3	475.9	515.1	552.2
25.5°	367.7	394.9	428.6	469.0	508.1	545.5
26°	361.7	388.6	421.8	461.9	500.8	538.6
26.5°	355.8	382.2	415.3	454.8	493.6	531.4
27°	349.8	375.8	408.4	447.5	486.2	524.3
27.5°	343.8	369.4	401.6	440.2	478.5	517.0
28°	337.8	363.0	394.5	432.7	470.8	509.3
28.5°	331.9	356.5	387.7	425.2	463.3	501.7
29°	325.9	350.3	380.9	417.8	455.7	494.0
29.5°	319.9	343.9	373.9	410.2	447.9	486.1
30°	314.0	337.5	366.9	403.1	440.1	478.3
30.5°	308.1	331.1	359.9	395.6	432.3	470.3
31°	302.2	324.9	353.0	388.1	424.6	462.2
31.5°	296.4	318.5	346.2	380.8	416.9	454.3
32°	290.4	312.2	339.3	373.5	409.0	446.1
32.5°	284.8	306.0	332.5	366.1	401.3	437.9
33°	279.0	299.7	325.7	359.2	393.6	429.8
33.5°	273.2	293.5	319.1	352.0	385.9	421.5
34°	267.6	287.4	312.4	344.9	378.6	413.5
34.5°	262.0	281.3	305.9	337.9	370.9	405.5
35°	256.4	275.3	299.4	331.0	363.5	397.5
35.5°	250.9	269.2	292.9	324.1	356.1	389.5
36°	245.5	263.5	286.8	317.6	348.9	381.4
36.5°	240.1	257.6	280.5	310.6	341.8	373.7
37°	234.7	251.9	274.6	304.2	334.5	365.8
37.5°	229.6	246.1	268.4	297.7	327.5	358.2
38°	224.4	240.6	262.5	291.4	320.5	350.5
38.5°	219.4	235.1	256.6	284.9	313.6	343.1
39°	214.5	229.7	250.9	278.9	307.1	335.7
39.5°	209.4	224.3	245.3	272.8	300.4	328.5
40°	204.5	219.2	239.6	266.8	293.8	321.2
40.5°	199.8	214.0	234.2	260.7	287.4	314.3
41°	195.1	209.1	228.8	255.0	281.1	307.4
41.5°	190.4	204.1	223.6	249.2	274.9	300.5
42°	186.0	199.3	218.4	243.7	268.8	293.9
42.5°	181.5	194.5	213.2	238.2	262.8	287.5
43°	177.2	190.0	208.2	232.8	256.9	281.1
43.5°	172.9	185.3	203.2	227.4	251.2	274.9



TEST NUMBER: P775650

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	160.7	172.2	188.9	212.0	234.6	256.9
45.5°	156.8	167.9	184.4	207.0	229.3	251.1
46°	152.9	163.8	179.8	202.1	224.1	245.5
46.5°	149.1	159.7	175.5	197.3	218.9	240.0
47°	145.3	155.7	171.0	192.5	213.9	234.6
47.5°	141.6	151.8	166.8	187.9	208.9	229.4
48°	138.0	148.0	162.6	183.3	204.1	224.1
48.5°	134.5	144.2	158.4	178.8	199.3	218.9
49°	130.9	140.4	154.4	174.5	194.7	214.0
49.5°	127.5	136.7	150.4	170.2	190.1	209.1
50°	124.2	133.1	146.4	165.8	185.5	204.3
50.5°	120.9	129.6	142.5	161.6	181.1	199.6
51°	117.7	126.1	138.7	157.6	176.7	194.9
51.5°	114.5	122.6	135.0	153.5	172.5	190.3
52°	111.3	119.4	131.3	149.6	168.1	185.8
52.5°	108.2	116.1	127.8	145.7	164.0	181.4
53°	105.2	112.9	124.2	141.7	159.9	177.1
53.5°	102.2	109.7	120.8	138.0	155.8	172.7
54°	99.3	106.5	117.4	134.2	151.8	168.5
54.5°	96.5	103.5	114.1	130.5	148.0	164.3
55°	93.7	100.5	110.8	126.9	144.0	160.2
55.5°	90.9	97.6	107.6	123.4	140.2	156.1
56°	88.3	94.7	104.3	119.9	136.4	152.1
56.5°	85.8	91.9	101.3	116.5	132.7	148.2
57°	83.3	89.0	98.2	113.1	129.0	144.4
57.5°	80.8	86.4	95.2	109.8	125.4	140.3
58°	78.3	83.6	92.3	106.5	121.8	136.6
58.5°	75.8	81.0	89.5	103.4	118.4	132.9
59°	73.5	78.4	86.6	100.2	114.9	129.2
59.5°	71.2	75.9	83.9	97.1	111.6	125.6
60°	69.1	73.4	81.1	94.1	108.2	122.1
60.5°	66.9	71.0	78.5	91.1	105.0	118.6
61°	64.8	68.7	75.8	88.2	101.6	115.1
61.5°	62.7	66.3	73.3	85.3	98.6	111.7
62°	60.7	64.0	70.8	82.4	95.5	108.4
62.5°	58.7	61.8	68.3	79.7	92.4	105.2
63°	56.8	59.7	65.9	76.9	89.3	101.9
63.5°	54.9	57.6	63.6	74.3	86.4	98.7
64°	53.1	55.5	61.2	71.6	83.5	95.6
64.5°	51.4	53.5	59.0	69.0	80.6	92.5
65°	49.7	51.6	56.8	66.5	77.8	89.4
65.5°	48.1	49.6	54.7	64.0	75.1	86.3
66°	46.5	47.7	52.5	61.5	72.4	83.1



TEST NUMBER: P775650

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	41.9	42.4	46.4	54.5	64.2	73.9
68°	40.5	40.7	44.5	52.3	61.6	70.9
68.5°	39.0	39.1	42.7	50.1	59.0	67.8
69°	37.6	37.5	40.9	47.9	56.4	64.9
69.5°	36.2	35.8	39.0	45.9	53.9	62.0
70°	34.8	34.4	37.3	43.9	51.5	59.1
70.5°	33.5	33.1	35.7	41.9	49.1	56.4
71°	32.2	31.7	34.2	39.9	46.7	53.6
71.5°	30.8	30.3	32.6	38.0	44.4	50.9
72°	29.6	29.0	31.0	36.2	42.1	48.2
72.5°	28.4	27.7	29.4	34.4	39.9	45.7
73°	27.0	26.4	28.0	32.7	37.8	43.2
73.5°	25.8	25.2	26.5	30.9	35.5	40.6
74°	24.6	24.0	25.1	29.2	33.6	38.2
74.5°	23.5	22.8	23.8	27.5	31.7	35.7
75°	22.3	21.6	22.5	25.9	29.8	33.5
75.5°	21.2	20.5	21.2	24.3	27.9	31.3
76°	20.1	19.4	20.0	22.7	26.1	29.1
76.5°	19.0	18.3	18.7	21.3	24.3	26.9
77°	17.9	17.3	17.6	19.8	22.6	24.8
77.5°	16.9	16.3	16.4	18.4	20.9	22.7
78°	15.8	15.3	15.3	17.1	19.3	20.7
78.5°	14.8	14.3	14.3	15.7	17.7	18.8
79°	13.8	13.4	13.3	14.5	16.2	16.9
79.5°	12.8	12.4	12.2	13.2	14.7	15.2
80°	11.8	11.5	11.3	12.1	13.3	13.5
80.5°	10.9	10.7	10.3	11.0	11.9	12.0
81°	10.0	9.8	9.5	9.9	10.6	10.5
81.5°	9.1	8.9	8.6	8.8	9.3	9.1
82°	8.2	8.1	7.7	7.9	8.1	7.7
82.5°	7.3	7.3	6.9	7.0	6.9	6.4
83°	6.5	6.5	6.1	6.1	5.8	5.3
83.5°	5.6	5.6	5.3	5.3	4.9	4.3
84°	4.8	4.9	4.6	4.5	4.0	3.5
84.5°	4.0	4.1	3.9	3.8	3.4	3.0
85°	3.2	3.4	3.3	3.2	2.7	2.6
85.5°	2.4	2.8	2.6	2.6	2.1	2.1
86°	1.7	2.1	2.0	2.0	1.5	1.7
86.5°	1.0	1.4	1.3	1.4	1.1	1.4
87°	0.5	0.7	0.8	1.0	0.8	1.2
87.5°	0.1	0.2	0.3	0.5	0.5	0.9
88°	0.0	0.0	0.0	0.1	0.3	0.7
88.5°	0.0	0.0	0.0	0.0	0.1	0.5



TEST NUMBER: P775650

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-2700K

**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°	592.3	600.1	584.7	551.9	507.6	469.3	437.7	414.6	395.4	391.9	399.0
22°	587.5	596.1	580.8	547.6	502.9	464.4	432.6	409.4	390.1	386.7	393.5



44°	268.7	276.0	271.2	254.8	228.9	208.9	193.6	182.9	169.4	166.7	165.8
44.5°	262.7	269.8	265.1	249.0	223.3	203.8	188.9	178.4	165.2	162.9	161.8



66.5°	80.0	82.5	78.0	69.8	60.8	56.2	56.2	56.4	52.7	50.9	48.2
67°	76.9	79.4	75.3	67.3	58.6	54.3	54.4	54.5	50.8	49.2	46.6



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



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21.5°	414.9	443.6	478.6	520.0	559.3	592.3
22°	409.2	437.9	472.8	514.3	553.7	587.5



44°	168.8	180.8	198.4	222.1	245.5	268.7
44.5°	164.7	176.4	193.7	217.0	240.0	262.7

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66.5°	44.9	45.9	50.4	59.1	69.6	80.0
67°	43.4	44.1	48.4	56.8	66.9	76.9

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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)