

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: P775654

Luminaire Tested: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775654
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-5000K
Description: 4 INCH ROUND NARROW LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

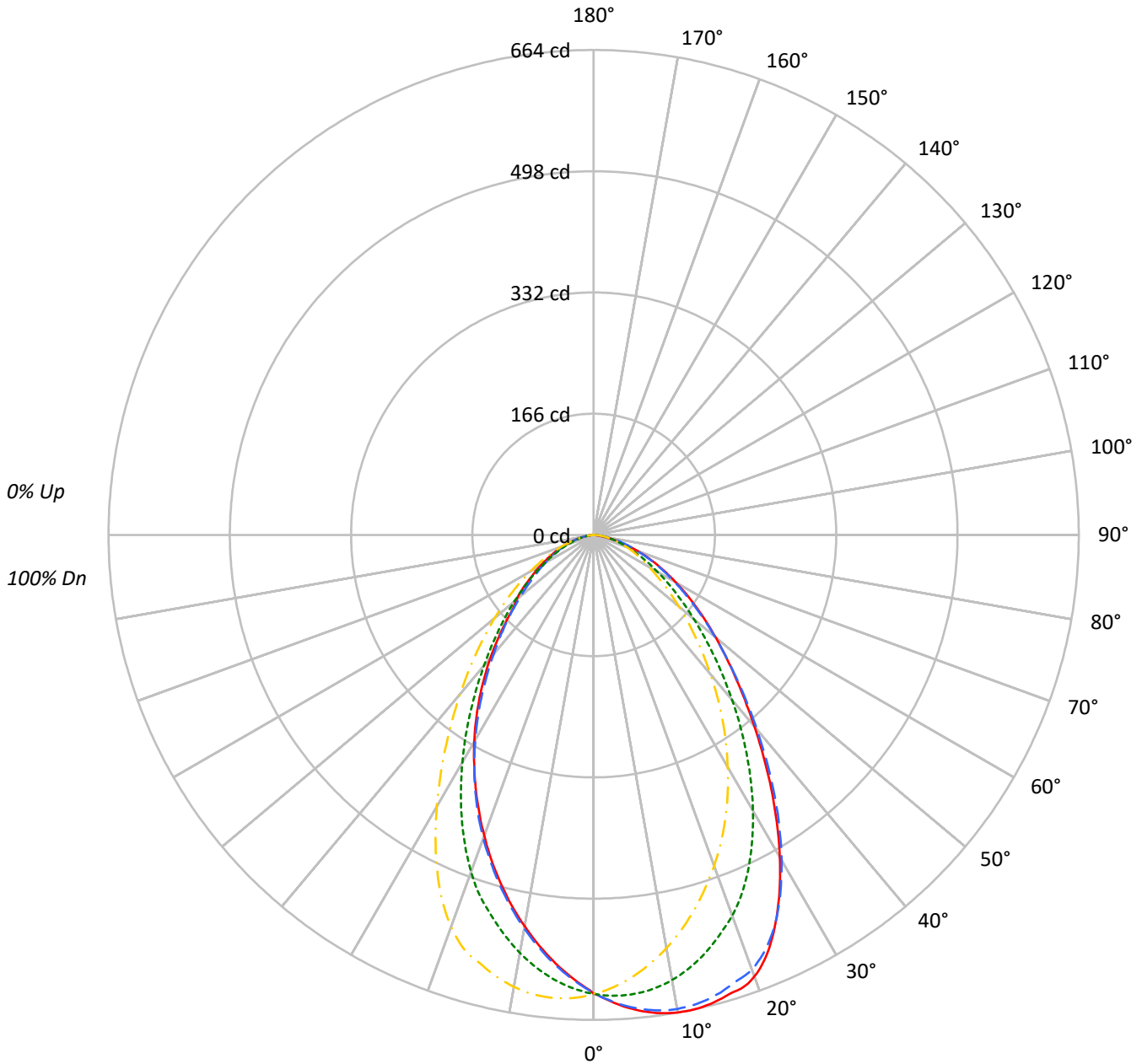
Lumens per Lamp: N/A
Luminaire Lumens: 1042.9 lumens
Efficiency: N/A
Efficacy: 104.3 lumens/watt
Spacing Criteria (0/90/45): 1.05 / 1.01 / 1.07
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88																			
2	103	96	90	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77																			
3	95	86	79	74	93	85	78	73	82	77	72	79	75	71	77	73	70	68																			
4	88	78	71	65	86	77	70	64	74	68	64	72	67	63	70	66	62	60																			
5	82	71	63	57	80	70	63	57	68	62	57	66	60	56	64	59	56	54																			
6	77	65	57	51	75	64	57	51	62	56	51	61	55	50	59	54	50	48																			
7	72	60	52	47	70	59	52	46	58	51	46	56	50	46	55	50	45	44																			
8	67	55	48	42	66	55	47	42	53	47	42	52	46	42	51	46	42	40																			
9	63	51	44	39	62	51	44	39	50	43	38	49	43	38	48	42	38	36																			
10	60	48	40	36	58	47	40	36	46	40	35	45	39	35	44	39	35	34																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	79034	79034	79034	79034
5°	82431	79715	74484	77251
10°	84841	79064	69531	74259
15°	85939	77131	64233	70356
20°	86168	74302	58660	65704
25°	81677	69694	53044	59335
30°	74040	63359	47505	52257
35°	65064	56046	41850	45061
40°	56218	48431	36077	38361
45°	48713	41273	30488	32641
50°	42603	35026	26921	27763
55°	37432	29796	23916	23499
60°	32746	25321	21092	19683
65°	28379	21530	18552	16378
70°	23181	18140	15675	13504
75°	17359	15414	12691	11184
80°	10436	13408	9059	8914
85°	4043	12418	3177	5198

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 45°
 Luminance: 49994 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.7	5.6
10°-20°	160.5	15.4
20°-30°	217.5	20.9
30°-40°	211.4	20.3
40°-50°	167.3	16.0
50°-60°	117.2	11.2
60°-70°	71.1	6.8
70°-80°	32.6	3.1
80°-90°	6.6	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°	436.7	41.9
0°-40°	648.1	62.1
0°-60°	932.7	89.4
0°-90°	1042.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1042.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	628	628	628	628	628	
5°	652	631	590	612	652	63
15°	660	592	493	540	660	186
25°	588	502	382	427	588	269
35°	424	365	272	293	424	264
45°	274	232	171	183	274	212
55°	171	136	109	107	171	153
65°	95	72	62	55	95	94
75°	36	32	26	23	36	39
85°	3	9	2	4	3	5
90°	0	1	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	628.0	628.0	628.0	628.0	628.0	628.0	628.0	628.0	628.0	628.0	628.0
0.5°	629.9	630.2	630.0	629.7	629.4	628.2	627.4	627.0	623.5	623.4	624.0
1°	632.9	633.3	633.0	631.7	630.1	627.7	625.6	624.3	620.1	620.1	621.0
1.5°	635.8	636.3	635.5	633.4	630.8	627.1	623.8	621.6	616.6	616.4	617.7
2°	638.5	639.3	637.9	635.2	631.2	626.3	621.9	618.6	613.1	612.6	614.1
2.5°	641.2	642.2	640.4	636.8	631.6	625.4	619.8	615.7	609.3	608.9	610.6
3°	643.8	644.7	642.7	638.2	631.7	624.3	617.5	612.4	605.5	605.1	607.1
3.5°	646.2	647.3	644.7	639.5	631.8	623.1	615.2	609.3	601.7	601.0	603.4
4°	648.5	649.6	646.7	640.6	631.6	621.7	612.8	605.9	597.8	597.0	599.6
4.5°	650.6	651.9	648.6	641.5	631.4	620.3	610.2	602.4	593.7	592.8	595.7
5°	652.5	654.1	650.3	642.4	631.0	618.6	607.4	598.9	589.6	588.6	591.9
5.5°	654.3	656.1	651.9	643.0	630.4	616.9	604.7	595.3	585.3	584.2	587.6
6°	656.0	657.9	653.2	643.7	629.7	614.9	601.6	591.4	581.1	579.7	583.6
6.5°	657.5	659.6	654.5	644.1	628.8	613.0	598.6	587.6	576.7	575.3	579.2
7°	658.9	661.1	655.6	644.3	627.9	610.7	595.4	583.8	572.3	570.8	574.7
7.5°	660.2	662.5	656.6	644.3	626.6	608.5	592.2	579.7	567.8	566.1	570.3
8°	661.1	663.7	657.4	644.3	625.3	606.0	588.8	575.6	563.2	561.3	565.9
8.5°	662.1	664.8	658.0	644.1	623.9	603.6	585.3	571.3	558.5	556.7	561.4
9°	662.8	665.7	658.6	643.7	622.3	600.8	581.6	567.1	553.8	551.8	556.7
9.5°	663.5	666.5	658.8	643.0	620.6	598.0	578.0	562.8	548.9	546.9	551.9
10°	663.9	667.0	659.0	642.3	618.7	595.1	574.3	558.5	544.1	542.0	547.1
10.5°	664.1	667.4	658.9	641.4	616.7	592.1	570.3	553.9	539.2	537.0	542.3
11°	664.2	667.6	658.8	640.5	614.5	588.9	566.3	549.3	534.3	532.0	537.4
11.5°	664.2	667.7	658.5	639.2	612.1	585.7	562.3	544.8	529.3	526.9	532.4
12°	664.0	667.7	657.9	637.9	609.7	582.3	558.2	540.2	524.3	521.7	527.3
12.5°	663.7	667.5	657.3	636.4	607.0	578.7	553.9	535.4	519.2	516.4	522.3
13°	663.2	667.1	656.4	634.8	604.3	575.1	549.7	530.6	514.1	511.3	517.3
13.5°	662.4	666.7	655.6	633.0	601.5	571.5	545.3	525.7	508.9	506.0	512.0
14°	661.7	665.8	654.4	630.9	598.5	567.6	540.7	520.8	503.6	500.5	506.8
14.5°	660.7	665.0	653.1	628.7	595.3	563.6	536.1	515.8	498.3	495.3	501.5
15°	659.6	664.0	651.6	626.5	592.0	559.5	531.6	510.8	493.0	489.8	496.2
15.5°	658.3	662.7	650.1	624.2	588.7	555.4	526.9	505.7	487.6	484.4	490.7
16°	656.8	661.5	648.2	621.6	585.0	551.2	522.0	500.5	482.3	479.0	485.4
16.5°	655.6	660.0	646.3	618.9	581.4	546.9	517.2	495.3	476.9	473.6	480.0
17°	654.6	658.6	644.4	616.2	577.6	542.4	512.4	490.2	471.4	467.8	474.6
17.5°	653.8	657.6	642.4	613.1	573.9	537.9	507.4	484.9	465.9	462.3	469.2
18°	652.9	656.8	640.8	610.3	570.0	533.4	502.2	479.5	460.4	456.7	463.7
18.5°	651.3	655.8	639.3	607.5	566.3	528.9	497.2	474.2	454.8	451.2	458.2
19°	649.3	654.4	637.8	605.0	562.6	524.3	492.1	468.9	449.3	445.7	453.0
19.5°	646.5	652.3	635.9	602.3	558.8	519.8	487.2	463.6	443.6	440.1	447.6
20°	643.4	649.7	633.3	599.3	554.8	515.0	481.9	458.2	438.0	434.5	442.0
20.5°	639.9	646.6	630.2	595.8	550.3	510.3	476.9	452.7	432.3	428.8	436.4
21°	635.8	643.2	626.6	592.2	545.5	505.1	471.4	447.2	426.9	423.3	430.6



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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°	620.6	630.2	614.2	578.5	530.6	489.2	455.4	430.6	410.0	406.4	413.5
23°	614.7	625.0	609.6	573.8	525.0	483.7	449.7	425.0	404.3	400.9	407.6
23.5°	608.5	619.6	604.4	568.6	519.6	478.2	444.2	419.4	398.9	395.3	401.6
24°	602.1	613.7	599.2	563.2	513.9	472.2	438.4	413.9	393.2	389.7	395.8
24.5°	595.3	607.4	593.5	557.4	508.0	466.3	432.7	408.1	387.6	384.1	389.9
25°	588.2	600.8	587.5	551.6	501.9	460.4	426.7	402.5	382.0	378.5	384.1
25.5°	581.1	593.9	581.1	545.6	495.9	454.3	420.9	396.9	376.5	372.8	378.0
26°	573.8	586.9	574.6	539.3	489.7	448.2	415.2	391.2	371.1	367.0	372.0
26.5°	566.1	579.7	567.9	533.0	483.3	441.9	409.2	385.4	365.4	361.5	366.1
27°	558.5	572.2	560.9	526.4	476.7	435.6	403.2	379.7	360.0	355.8	360.1
27.5°	550.7	564.5	553.6	519.7	470.2	429.5	397.2	374.0	354.3	350.2	354.0
28°	542.5	556.5	545.9	512.7	463.5	423.3	391.2	368.4	348.9	344.5	347.9
28.5°	534.4	548.4	538.1	505.7	456.8	416.8	385.2	362.5	343.5	338.9	342.0
29°	526.2	540.3	530.4	498.5	449.9	410.3	379.2	356.8	338.0	333.2	336.0
29.5°	517.8	532.1	522.6	491.1	443.0	404.0	373.2	351.1	332.5	327.7	330.0
30°	509.5	523.6	514.5	483.8	436.0	397.5	367.0	345.5	326.9	322.0	324.0
30.5°	501.0	515.1	506.2	476.2	428.9	390.9	360.9	339.7	321.4	316.5	318.1
31°	492.3	506.5	497.9	468.5	422.1	384.5	355.0	334.0	316.0	310.9	312.2
31.5°	483.9	497.8	489.6	460.8	414.9	377.9	348.9	328.3	310.5	305.2	306.5
32°	475.2	488.9	481.0	452.8	407.7	371.5	342.9	322.7	305.1	299.8	300.6
32.5°	466.4	480.1	472.5	444.9	400.6	365.0	336.7	317.0	299.6	294.2	294.7
33°	457.8	471.3	464.1	437.0	393.3	358.4	330.8	311.5	294.1	288.7	288.8
33.5°	449.1	462.6	455.9	429.0	386.3	351.9	324.8	305.6	288.7	283.1	283.3
34°	440.5	453.8	447.3	420.9	379.1	345.2	318.8	300.1	283.3	277.6	277.4
34.5°	432.0	444.8	438.6	412.9	371.8	338.7	312.9	294.5	277.7	272.2	271.7
35°	423.5	436.1	430.0	405.0	364.8	332.3	306.8	289.0	272.4	266.8	266.0
35.5°	415.0	427.4	421.5	397.1	357.5	325.8	301.0	283.4	267.1	261.5	260.6
36°	406.3	418.8	413.0	389.2	350.4	319.3	295.2	277.9	261.6	256.2	255.0
36.5°	398.1	410.3	404.6	381.2	343.1	312.8	289.2	272.5	256.3	250.9	249.6
37°	389.7	401.5	396.2	373.5	336.3	306.6	283.3	267.1	250.9	245.5	244.1
37.5°	381.6	393.0	388.0	365.7	329.1	300.1	277.4	261.6	245.7	240.4	238.8
38°	373.4	384.7	379.5	357.7	322.3	293.8	271.7	256.4	240.4	235.2	233.5
38.5°	365.5	376.4	371.4	350.3	315.3	287.5	265.8	251.0	235.2	230.0	228.5
39°	357.6	368.2	363.2	342.5	308.5	281.4	260.0	245.7	230.1	224.9	223.3
39.5°	350.0	360.2	355.5	335.3	301.5	275.2	254.3	240.4	224.9	219.8	218.1
40°	342.2	352.3	347.5	327.5	294.8	269.0	248.7	235.2	219.6	214.7	213.1
40.5°	334.8	344.6	339.7	320.4	288.2	262.7	243.1	229.8	214.6	209.7	208.3
41°	327.5	336.7	332.1	313.1	281.4	256.9	237.6	224.6	209.6	204.8	203.4
41.5°	320.1	329.5	324.6	305.8	274.8	250.7	232.2	219.4	204.6	199.9	198.7
42°	313.1	322.0	317.1	298.6	268.5	244.9	226.9	214.5	199.6	195.2	194.3
42.5°	306.3	314.8	310.0	292.0	262.3	239.2	221.6	209.4	194.8	190.6	189.8
43°	299.4	307.9	303.0	285.2	256.0	233.6	216.4	204.5	189.9	186.1	185.2
43.5°	292.8	300.9	295.8	278.5	249.8	227.9	211.2	199.5	185.1	181.7	180.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	273.7	280.9	275.7	258.8	231.9	211.9	196.3	185.5	171.3	169.2	168.1
45.5°	267.5	274.6	269.2	252.6	226.1	206.6	191.6	181.2	166.8	165.3	164.0
46°	261.5	268.4	262.9	246.5	220.5	201.6	186.9	176.8	162.5	161.2	160.0
46.5°	255.7	262.3	256.6	240.4	214.9	196.5	182.4	172.4	158.4	157.3	155.9
47°	249.9	256.2	250.6	234.4	209.4	191.5	177.9	168.2	154.4	153.6	152.0
47.5°	244.4	250.3	244.6	228.7	204.1	186.7	173.4	164.0	150.7	149.9	148.1
48°	238.7	244.5	238.6	222.7	198.7	181.8	169.0	160.0	147.4	146.3	144.5
48.5°	233.2	238.9	233.0	217.3	193.6	177.2	164.6	155.9	144.5	142.8	140.8
49°	227.9	233.4	227.3	211.9	188.6	172.6	160.5	152.1	141.9	139.4	137.3
49.5°	222.7	227.9	221.9	206.5	183.7	168.2	156.2	148.2	139.6	136.2	133.7
50°	217.6	222.7	216.5	201.2	178.9	163.8	152.2	144.5	137.5	133.2	130.3
50.5°	212.6	217.4	211.1	196.0	174.1	159.4	148.2	140.9	135.3	130.2	126.8
51°	207.6	212.3	205.9	191.0	169.4	155.3	144.3	137.4	132.9	127.6	123.6
51.5°	202.7	207.3	200.9	186.1	165.1	151.2	140.6	134.0	130.0	125.1	120.5
52°	197.9	202.3	195.9	181.1	160.6	147.2	136.7	130.6	126.8	122.2	117.3
52.5°	193.2	197.4	191.0	176.4	156.2	143.2	133.1	127.5	123.7	119.4	114.2
53°	188.6	192.7	186.1	171.8	152.0	139.3	129.5	124.5	120.7	116.5	111.3
53.5°	183.9	187.9	181.4	167.1	147.8	135.4	126.0	121.4	117.6	113.6	108.3
54°	179.5	183.3	176.7	162.6	143.8	131.7	122.6	118.6	114.7	110.8	105.4
54.5°	175.0	178.6	172.0	158.3	139.6	128.1	119.1	116.1	111.9	108.1	102.6
55°	170.6	174.2	167.7	153.9	135.8	124.6	115.9	113.4	109.0	105.5	100.0
55.5°	166.2	169.8	163.3	149.7	131.9	121.0	112.7	110.7	106.4	102.6	97.3
56°	162.0	165.4	158.9	145.5	128.2	117.4	109.5	108.0	103.6	100.0	94.7
56.5°	157.8	161.1	154.6	141.4	124.6	114.1	106.5	105.3	100.9	97.5	92.4
57°	153.8	157.0	150.5	137.5	120.8	110.7	103.5	102.6	98.3	95.1	90.0
57.5°	149.5	152.7	146.4	133.5	117.3	107.5	100.6	100.1	95.8	92.5	87.8
58°	145.6	148.6	142.3	129.7	113.8	104.3	97.8	97.5	93.2	90.2	85.5
58.5°	141.6	144.5	138.3	125.9	110.6	101.2	95.1	95.0	90.9	87.8	83.2
59°	137.7	140.7	134.5	122.1	107.2	98.1	92.4	92.5	88.4	85.5	80.9
59.5°	133.8	136.5	130.5	118.5	103.9	95.2	89.9	90.2	86.1	83.1	78.8
60°	130.1	132.9	126.8	115.0	100.6	92.3	87.5	87.8	83.8	80.8	76.6
60.5°	126.4	129.1	123.1	111.4	97.6	89.6	85.0	85.5	81.4	78.5	74.5
61°	122.7	125.3	119.5	108.1	94.5	86.9	82.6	83.1	79.2	76.4	72.4
61.5°	119.0	121.5	115.7	104.6	91.6	84.1	80.1	80.8	76.9	74.2	70.3
62°	115.5	118.1	112.3	101.3	88.8	81.3	78.0	78.5	74.8	72.0	68.3
62.5°	112.1	114.5	108.9	98.1	85.9	78.6	75.8	76.4	72.6	69.9	66.3
63°	108.6	110.9	105.4	95.0	83.0	76.1	73.6	74.2	70.5	68.0	64.3
63.5°	105.2	107.4	102.1	91.9	80.1	73.6	71.5	72.0	68.4	65.9	62.3
64°	101.9	104.0	98.8	88.8	77.4	71.2	69.6	69.9	66.4	63.9	60.4
64.5°	98.6	100.7	95.6	85.8	74.8	68.8	67.6	67.9	64.4	61.9	58.6
65°	95.3	97.5	92.4	82.8	72.3	66.5	65.6	66.0	62.3	60.0	56.7
65.5°	92.0	94.1	89.2	80.0	69.7	64.3	63.6	63.9	60.2	58.1	54.9
66°	88.6	91.0	86.2	77.3	67.2	62.0	61.8	61.9	58.2	56.2	53.2



TEST NUMBER: P775654

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	78.8	81.5	77.3	69.1	60.2	55.8	56.2	56.2	52.1	50.5	48.0
68°	75.6	78.4	74.4	66.5	58.0	53.8	54.5	54.2	50.2	48.7	46.2
68.5°	72.3	75.3	71.6	64.0	55.7	51.9	52.6	52.3	48.3	46.8	44.7
69°	69.2	72.3	68.9	61.5	53.6	50.0	50.9	50.5	46.4	45.1	43.1
69.5°	66.1	69.3	66.3	59.1	51.5	48.3	49.1	48.6	44.4	43.3	41.5
70°	63.0	66.3	63.6	56.7	49.3	46.5	47.5	46.8	42.6	41.6	39.9
70.5°	60.1	63.4	61.1	54.3	47.3	44.8	45.8	45.1	40.9	39.9	38.4
71°	57.1	60.6	58.5	52.1	45.4	43.2	44.2	43.3	39.1	38.0	36.8
71.5°	54.2	57.8	56.1	49.9	43.5	41.6	42.6	41.6	37.4	36.4	35.3
72°	51.4	55.1	53.7	47.7	41.7	40.0	41.0	39.9	35.7	34.8	33.8
72.5°	48.7	52.5	51.3	45.7	39.9	38.5	39.5	38.2	34.0	33.1	32.3
73°	46.0	49.9	48.9	43.7	38.2	36.9	37.9	36.6	32.3	31.7	30.9
73.5°	43.3	47.4	46.7	41.6	36.4	35.5	36.4	34.8	30.7	30.1	29.5
74°	40.7	44.9	44.3	39.6	34.8	34.1	35.0	33.4	29.1	28.5	28.1
74.5°	38.0	42.4	42.2	38.3	33.2	32.7	33.6	31.8	27.6	27.0	26.6
75°	35.7	40.1	40.1	36.4	31.7	31.3	32.1	30.3	26.1	25.5	25.4
75.5°	33.4	37.7	37.8	34.6	30.2	30.1	30.7	28.8	24.6	24.1	24.0
76°	31.0	35.7	35.9	32.7	28.8	28.8	29.3	27.3	23.1	22.6	22.7
76.5°	28.7	33.6	34.0	30.9	27.3	27.5	27.9	25.8	21.6	21.2	21.4
77°	26.4	31.4	32.2	29.2	26.0	26.2	26.5	24.4	20.2	19.8	20.1
77.5°	24.2	29.3	30.3	27.6	24.6	25.0	25.1	23.0	18.9	18.5	19.0
78°	22.1	27.3	28.3	26.1	23.3	23.9	24.0	21.6	17.6	17.2	17.8
78.5°	20.0	25.5	26.5	24.6	22.1	22.6	22.6	20.2	16.2	15.9	16.5
79°	18.0	23.6	24.8	23.1	20.8	21.4	21.4	18.9	14.9	14.6	15.3
79.5°	16.2	21.7	23.1	21.6	19.6	20.4	20.1	17.6	13.6	13.4	14.3
80°	14.4	19.9	21.4	20.2	18.5	19.2	19.0	16.3	12.5	12.1	13.1
80.5°	12.8	18.3	19.8	19.0	17.4	18.1	17.8	15.1	11.2	11.0	12.0
81°	11.2	16.7	18.3	17.7	16.3	17.1	16.6	13.9	10.1	9.9	11.0
81.5°	9.7	15.2	16.8	16.4	15.2	16.0	15.5	12.7	9.0	8.8	10.0
82°	8.2	13.7	15.3	15.2	14.2	14.9	14.4	11.5	7.9	7.8	9.1
82.5°	6.8	12.3	14.0	14.1	13.2	13.9	13.2	10.4	6.7	6.7	8.1
83°	5.6	10.9	12.7	12.9	12.3	12.9	12.1	9.4	5.5	5.6	7.1
83.5°	4.6	9.6	11.4	11.8	11.3	11.9	11.2	8.3	4.6	4.8	6.2
84°	3.7	8.2	10.2	10.8	10.3	10.9	10.2	7.2	3.6	4.0	5.3
84.5°	3.2	7.0	9.1	9.8	9.5	10.0	9.3	6.2	2.8	3.4	4.6
85°	2.8	5.9	8.0	8.8	8.6	9.1	8.4	5.3	2.2	2.9	3.7
85.5°	2.2	4.8	7.0	7.9	7.8	8.2	7.5	4.6	1.9	2.3	3.0
86°	1.8	3.8	6.1	7.0	6.9	7.2	6.5	3.9	1.6	1.9	2.1
86.5°	1.5	3.2	5.2	6.1	6.1	6.3	5.6	3.4	1.3	1.4	1.5
87°	1.3	2.6	4.4	5.3	5.3	5.4	4.8	2.8	1.0	1.0	0.9
87.5°	1.0	1.9	3.7	4.6	4.6	4.6	3.9	2.2	0.6	0.5	0.3
88°	0.7	1.3	3.1	3.8	3.7	3.8	3.2	1.7	0.4	0.2	0.1
88.5°	0.5	0.9	2.3	3.1	3.0	3.0	2.5	1.2	0.1	0.1	0.0



TEST NUMBER: P775654

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.2	0.6	1.2	1.0	0.9	0.4	0.1	0.0	0.1	0.0



TEST NUMBER: P775654

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	628.0	628.0	628.0	628.0	628.0	628.0
0.5°	625.1	627.5	628.6	630.3	631.9	629.9
1°	622.8	626.2	628.7	631.5	634.2	632.9
1.5°	620.2	624.8	628.6	632.7	636.3	635.8
2°	617.7	623.4	628.3	633.6	638.3	638.5
2.5°	614.9	621.7	628.0	634.5	640.2	641.2
3°	612.0	620.0	627.4	635.1	642.0	643.8
3.5°	608.9	618.1	626.7	635.8	643.6	646.2
4°	605.8	616.1	625.8	636.1	644.8	648.5
4.5°	602.6	613.8	624.8	636.3	646.1	650.6
5°	599.2	611.5	623.6	636.4	647.4	652.5
5.5°	595.7	609.1	622.2	636.3	648.3	654.3
6°	592.2	606.5	620.9	636.1	649.1	656.0
6.5°	588.6	603.7	619.3	635.7	649.7	657.5
7°	584.6	600.8	617.4	635.0	650.3	658.9
7.5°	580.8	597.8	615.5	634.3	650.7	660.2
8°	576.8	594.9	613.5	633.4	650.8	661.1
8.5°	572.7	591.5	611.3	632.5	650.8	662.1
9°	568.5	588.1	608.9	631.3	650.7	662.8
9.5°	564.2	584.6	606.5	629.9	650.5	663.5
10°	559.8	581.1	603.9	628.4	650.1	663.9
10.5°	555.3	577.4	601.2	626.8	649.5	664.1
11°	550.8	573.6	598.3	625.0	648.8	664.2
11.5°	546.3	569.7	595.2	623.1	647.8	664.2
12°	541.6	565.5	592.2	621.1	646.7	664.0
12.5°	536.9	561.5	589.0	618.8	645.6	663.7
13°	532.1	557.3	585.6	616.5	644.3	663.2
13.5°	527.1	553.1	582.1	614.1	642.8	662.4
14°	522.1	548.6	578.4	611.4	641.1	661.7
14.5°	517.1	544.3	575.0	608.7	639.5	660.7
15°	512.3	540.0	571.4	606.1	637.5	659.6
15.5°	507.3	535.7	568.1	603.9	635.9	658.3
16°	502.4	531.3	564.8	601.9	634.6	656.8
16.5°	497.3	527.1	561.5	599.5	633.3	655.6
17°	492.3	522.7	557.7	596.8	631.8	654.6
17.5°	487.2	518.0	553.3	593.3	629.8	653.8
18°	482.1	513.0	548.6	589.5	626.9	652.9
18.5°	476.8	507.8	543.6	585.3	623.5	651.3
19°	471.2	502.1	538.4	580.8	619.7	649.3
19.5°	465.6	496.5	533.0	575.9	615.7	646.5
20°	459.8	490.6	527.6	570.8	611.2	643.4
20.5°	453.9	484.9	521.7	565.4	606.5	639.9
21°	448.0	478.7	515.8	559.7	601.2	635.8

TEST NUMBER: P775654

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	429.7	460.0	497.3	541.5	583.8	620.6
23°	423.5	453.7	490.8	535.1	577.3	614.7
23.5°	417.1	447.2	484.1	528.2	570.6	608.5
24°	410.8	440.5	477.5	521.4	563.4	602.1
24.5°	404.4	433.9	470.6	514.2	556.3	595.3
25°	398.1	427.3	463.7	506.9	548.7	588.2
25.5°	391.7	420.7	456.5	499.6	541.2	581.1
26°	385.3	414.0	449.4	492.0	533.5	573.8
26.5°	379.1	407.2	442.5	484.4	525.8	566.1
27°	372.7	400.4	435.1	476.7	517.9	558.5
27.5°	366.3	393.5	427.9	468.9	509.7	550.7
28°	359.9	386.7	420.3	460.9	501.5	542.5
28.5°	353.6	379.8	413.0	453.0	493.5	534.4
29°	347.2	373.2	405.8	445.1	485.4	526.2
29.5°	340.8	366.4	398.3	437.0	477.1	517.8
30°	334.5	359.6	390.9	429.5	468.8	509.5
30.5°	328.2	352.7	383.4	421.5	460.5	501.0
31°	321.9	346.1	376.1	413.5	452.4	492.3
31.5°	315.8	339.3	368.8	405.7	444.2	483.9
32°	309.4	332.6	361.5	397.9	435.7	475.2
32.5°	303.4	326.0	354.2	390.0	427.5	466.4
33°	297.2	319.3	347.0	382.7	419.3	457.8
33.5°	291.0	312.7	339.9	375.0	411.1	449.1
34°	285.1	306.2	332.8	367.4	403.4	440.5
34.5°	279.1	299.7	325.9	360.0	395.1	432.0
35°	273.1	293.3	319.0	352.6	387.3	423.5
35.5°	267.3	286.8	312.0	345.3	379.4	415.0
36°	261.5	280.7	305.5	338.3	371.7	406.3
36.5°	255.8	274.4	298.8	330.9	364.1	398.1
37°	250.0	268.3	292.5	324.1	356.4	389.7
37.5°	244.6	262.2	285.9	317.1	348.9	381.6
38°	239.0	256.3	279.6	310.4	341.4	373.4
38.5°	233.7	250.4	273.3	303.5	334.1	365.5
39°	228.5	244.7	267.3	297.1	327.2	357.6
39.5°	223.0	238.9	261.3	290.6	320.0	350.0
40°	217.8	233.5	255.2	284.2	313.0	342.2
40.5°	212.8	227.9	249.5	277.7	306.2	334.8
41°	207.8	222.7	243.7	271.6	299.4	327.5
41.5°	202.8	217.4	238.2	265.5	292.8	320.1
42°	198.1	212.3	232.6	259.6	286.3	313.1
42.5°	193.3	207.2	227.1	253.7	279.9	306.3
43°	188.7	202.4	221.8	248.0	273.7	299.4
43.5°	184.1	197.4	216.4	242.2	267.6	292.8

TEST NUMBER: P775654

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	171.1	183.4	201.2	225.8	249.9	273.7
45.5°	167.0	178.8	196.4	220.5	244.2	267.5
46°	162.8	174.4	191.5	215.3	238.7	261.5
46.5°	158.8	170.1	186.9	210.1	233.2	255.7
47°	154.7	165.8	182.1	205.0	227.8	249.9
47.5°	150.9	161.7	177.6	200.1	222.5	244.4
48°	147.1	157.6	173.2	195.2	217.4	238.7
48.5°	143.3	153.6	168.7	190.4	212.3	233.2
49°	139.5	149.6	164.4	185.9	207.4	227.9
49.5°	135.9	145.7	160.2	181.3	202.5	222.7
50°	132.4	141.8	155.9	176.6	197.6	217.6
50.5°	128.8	138.1	151.9	172.1	192.9	212.6
51°	125.4	134.4	147.8	167.8	188.2	207.6
51.5°	122.0	130.6	143.9	163.5	183.7	202.7
52°	118.6	127.2	139.9	159.3	179.0	197.9
52.5°	115.3	123.7	136.2	155.2	174.7	193.2
53°	112.1	120.3	132.4	151.0	170.3	188.6
53.5°	108.9	116.9	128.7	147.1	165.9	183.9
54°	105.8	113.5	125.1	143.0	161.7	179.5
54.5°	102.8	110.3	121.6	139.1	157.6	175.0
55°	99.9	107.1	118.1	135.2	153.3	170.6
55.5°	96.9	104.0	114.7	131.5	149.4	166.2
56°	94.1	100.9	111.1	127.8	145.4	162.0
56.5°	91.4	97.9	108.0	124.1	141.4	157.8
57°	88.8	94.8	104.6	120.5	137.5	153.8
57.5°	86.1	92.1	101.5	117.0	133.6	149.5
58°	83.4	89.1	98.4	113.5	129.8	145.6
58.5°	80.8	86.3	95.4	110.2	126.2	141.6
59°	78.3	83.5	92.3	106.8	122.4	137.7
59.5°	75.9	80.9	89.4	103.5	118.9	133.8
60°	73.6	78.2	86.4	100.3	115.3	130.1
60.5°	71.3	75.7	83.7	97.1	111.9	126.4
61°	69.1	73.2	80.8	94.0	108.3	122.7
61.5°	66.8	70.7	78.1	90.9	105.1	119.0
62°	64.7	68.2	75.4	87.8	101.8	115.5
62.5°	62.6	65.9	72.8	84.9	98.5	112.1
63°	60.5	63.6	70.2	81.9	95.2	108.6
63.5°	58.5	61.4	67.8	79.2	92.1	105.2
64°	56.6	59.1	65.2	76.3	89.0	101.9
64.5°	54.8	57.0	62.9	73.5	85.9	98.6
65°	53.0	55.0	60.5	70.9	82.9	95.3
65.5°	51.3	52.9	58.3	68.2	80.0	92.0
66°	49.6	50.8	55.9	65.5	77.2	88.6



TEST NUMBER: P775654

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	44.7	45.2	49.4	58.1	68.4	78.8
68°	43.2	43.4	47.4	55.7	65.6	75.6
68.5°	41.6	41.7	45.5	53.4	62.9	72.3
69°	40.1	40.0	43.6	51.0	60.1	69.2
69.5°	38.6	38.2	41.6	48.9	57.4	66.1
70°	37.1	36.7	39.7	46.8	54.9	63.0
70.5°	35.7	35.3	38.0	44.7	52.3	60.1
71°	34.3	33.8	36.4	42.5	49.8	57.1
71.5°	32.8	32.3	34.7	40.5	47.3	54.2
72°	31.5	30.9	33.0	38.6	44.9	51.4
72.5°	30.3	29.5	31.3	36.7	42.5	48.7
73°	28.8	28.1	29.8	34.8	40.3	46.0
73.5°	27.5	26.9	28.2	32.9	37.8	43.3
74°	26.2	25.6	26.7	31.1	35.8	40.7
74.5°	25.0	24.3	25.4	29.3	33.8	38.0
75°	23.8	23.0	24.0	27.6	31.8	35.7
75.5°	22.6	21.8	22.6	25.9	29.7	33.4
76°	21.4	20.7	21.3	24.2	27.8	31.0
76.5°	20.2	19.5	19.9	22.7	25.9	28.7
77°	19.1	18.4	18.8	21.1	24.1	26.4
77.5°	18.0	17.4	17.5	19.6	22.3	24.2
78°	16.8	16.3	16.3	18.2	20.6	22.1
78.5°	15.8	15.2	15.2	16.7	18.9	20.0
79°	14.7	14.3	14.2	15.5	17.3	18.0
79.5°	13.6	13.2	13.0	14.1	15.7	16.2
80°	12.6	12.3	12.0	12.9	14.2	14.4
80.5°	11.6	11.4	11.0	11.7	12.7	12.8
81°	10.7	10.4	10.1	10.6	11.3	11.2
81.5°	9.7	9.5	9.2	9.4	9.9	9.7
82°	8.7	8.6	8.2	8.4	8.6	8.2
82.5°	7.8	7.8	7.4	7.5	7.4	6.8
83°	6.9	6.9	6.5	6.5	6.2	5.6
83.5°	6.0	6.0	5.6	5.6	5.2	4.6
84°	5.1	5.2	4.9	4.8	4.3	3.7
84.5°	4.3	4.4	4.2	4.0	3.6	3.2
85°	3.4	3.6	3.5	3.4	2.9	2.8
85.5°	2.6	3.0	2.8	2.8	2.2	2.2
86°	1.8	2.2	2.1	2.1	1.6	1.8
86.5°	1.1	1.5	1.4	1.5	1.2	1.5
87°	0.5	0.7	0.9	1.1	0.9	1.3
87.5°	0.1	0.2	0.3	0.5	0.5	1.0
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: P775654

CATALOG NUMBER: HCDJBL510CSD-HCD42TRH-HCD42TRLWW-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°	631.0	639.3	622.9	587.9	540.7	499.9	466.2	441.7	421.3	417.5	425.1
22°	625.9	635.0	618.7	583.3	535.7	494.7	460.8	436.2	415.6	412.0	419.2



44°	286.2	294.0	288.9	271.4	243.8	222.5	206.2	194.8	180.4	177.5	176.6
44.5°	279.8	287.4	282.4	265.2	237.9	217.1	201.2	190.0	175.9	173.5	172.3



66.5°	85.3	87.9	83.1	74.4	64.8	59.9	59.9	60.1	56.2	54.2	51.4
67°	81.9	84.6	80.2	71.7	62.4	57.9	58.0	58.1	54.1	52.4	49.7



89°	0.3	0.6	1.7	2.5	2.2	2.2	1.7	0.7	0.0	0.1	0.0
89.5°	0.1	0.4	1.1	1.8	1.6	1.5	1.0	0.3	0.0	0.1	0.0

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21.5°	442.0	472.5	509.8	553.9	595.8	631.0
22°	436.0	466.4	503.6	547.9	589.8	625.9



44°	179.8	192.6	211.3	236.6	261.5	286.2
44.5°	175.4	187.9	206.3	231.1	255.7	279.8



66.5°	47.8	48.9	53.7	63.0	74.2	85.3
67°	46.2	47.0	51.6	60.5	71.3	81.9

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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)