

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: P775724

Luminaire Tested: HCDJBL510CSD-HCD61TRH-1000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775724
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B036)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD61TRH-1000lm-5000K
Description: 6 INCH ROUND SHALLOW-WIDE HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

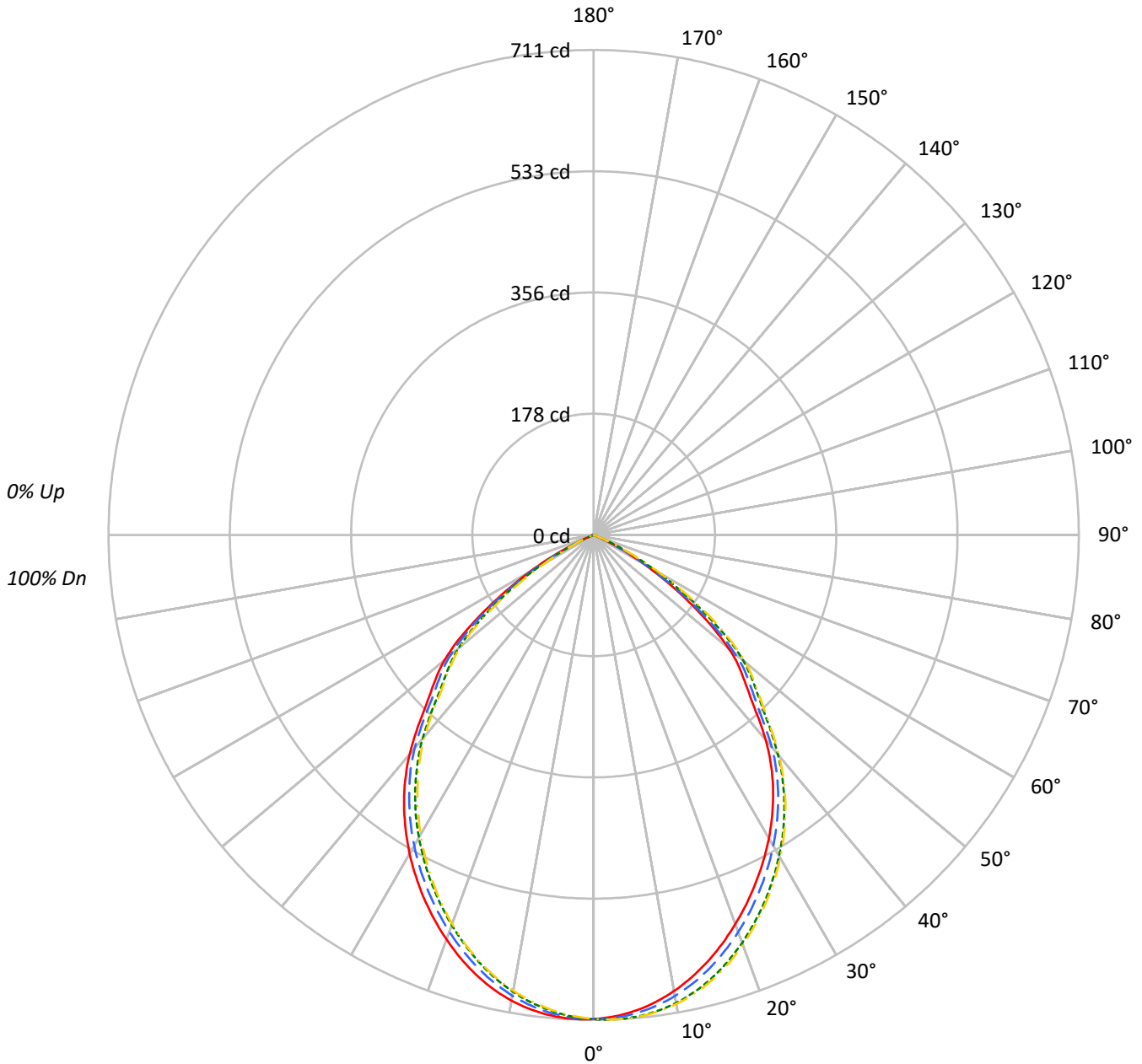
Lumens per Lamp: N/A
Luminaire Lumens: 1267.7 lumens
Efficiency: N/A
Efficacy: 126.8 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.12 / 1.2
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

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	112	108	105	103	109	106	103	101	102	100	98	98	97	95	95	93	92	90																			
2	104	98	93	89	102	96	92	87	93	89	86	90	87	84	87	84	82	80																			
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71																			
4	90	80	73	68	88	79	72	67	77	71	66	74	70	65	72	68	65	63																			
5	84	73	65	60	82	72	65	60	70	64	59	68	63	58	66	62	58	56																			
6	78	67	59	53	76	66	58	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	53	48	71	60	53	48	59	52	48	57	52	47	56	51	47	45																			
8	68	56	49	43	67	55	48	43	54	48	43	53	47	43	52	47	43	41																			
9	64	52	45	40	63	51	44	39	50	44	39	49	43	39	48	43	39	37																			
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	38911	38911	38911	38911
5°	38532	39021	38933	38559
10°	37797	38777	38593	37864
15°	36720	38133	37866	36811
20°	35423	37127	36806	35505
25°	34018	35863	35567	34036
30°	32518	34410	34151	32429
35°	30684	32592	32424	30517
40°	28074	30063	30013	27917
45°	24708	26778	26693	24530
50°	21978	24366	24281	22080
55°	16200	18762	18895	16640
60°	9254	11556	11841	9933
65°	2672	4345	4099	3476
70°	64	96	64	208
75°	42	42	42	42
80°	32	32	32	32
85°	63	0	0	63

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 27034 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.7	5.3
10°-20°	185.3	14.6
20°-30°	265.1	20.9
30°-40°	293.4	23.1
40°-50°	257.8	20.3
50°-60°	164.1	12.9
60°-70°	34.9	2.8
70°-80°	0.3	0.0
80°-90°	0.1	0.0
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°	517.0	40.8
0°-40°	810.4	63.9
0°-60°	1232.3	97.2
0°-90°	1267.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1267.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	710	710	710	710	710	
5°	700	709	708	701	700	66
15°	647	672	667	649	647	182
25°	562	593	588	563	562	259
35°	458	487	484	456	458	285
45°	319	345	344	316	319	248
55°	170	196	198	174	170	151
65°	21	34	32	27	21	27
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
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°	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8
0.5°	709.3	709.6	709.9	709.8	710.6	710.5	710.2	710.0	710.0	710.0	709.9
1°	708.8	709.2	709.8	709.8	710.8	710.8	710.5	710.4	710.3	710.0	709.7
1.5°	708.1	708.8	709.5	709.8	711.0	711.1	710.8	710.6	710.3	709.9	709.4
2°	707.3	708.1	709.1	709.6	711.0	711.2	711.0	710.7	710.3	709.6	709.0
2.5°	706.4	707.4	708.6	709.3	711.0	711.3	711.0	710.7	710.0	709.3	708.5
3°	705.5	706.5	707.9	709.0	710.8	711.2	711.0	710.5	709.8	708.9	707.8
3.5°	704.3	705.6	707.2	708.5	710.6	711.0	710.9	710.3	709.4	708.2	707.0
4°	703.0	704.5	706.3	707.8	710.2	710.8	710.6	709.9	708.9	707.6	706.0
4.5°	701.6	703.3	705.3	707.0	709.7	710.5	710.3	709.5	708.2	706.7	705.0
5°	700.2	701.9	704.1	706.1	709.1	709.9	709.7	708.9	707.5	705.8	704.0
5.5°	698.6	700.5	702.8	705.1	708.5	709.3	709.2	708.2	706.5	704.7	702.7
6°	696.8	698.9	701.5	704.1	707.6	708.7	708.5	707.4	705.6	703.4	701.2
6.5°	695.1	697.1	700.0	702.8	706.6	707.8	707.6	706.4	704.5	702.2	699.8
7°	693.2	695.3	698.4	701.4	705.6	706.9	706.6	705.4	703.3	700.8	698.2
7.5°	691.1	693.4	696.7	699.9	704.3	705.8	705.6	704.2	701.9	699.2	696.4
8°	688.9	691.3	694.8	698.3	703.1	704.6	704.4	702.8	700.5	697.6	694.6
8.5°	686.6	689.2	692.9	696.7	701.6	703.3	703.1	701.4	698.9	695.8	692.6
9°	684.2	686.8	690.9	694.8	700.0	701.8	701.6	699.8	697.0	693.8	690.4
9.5°	681.7	684.5	688.6	692.9	698.3	700.3	700.0	698.2	695.2	691.8	688.3
10°	679.0	681.8	686.3	690.9	696.6	698.6	698.4	696.4	693.3	689.7	686.0
10.5°	676.3	679.1	683.9	688.6	694.7	696.8	696.6	694.5	691.3	687.4	683.5
11°	673.4	676.5	681.4	686.3	692.7	694.9	694.7	692.4	688.9	685.1	680.9
11.5°	670.4	673.6	678.7	683.8	690.4	692.8	692.6	690.2	686.6	682.5	678.3
12°	667.4	670.6	676.0	681.3	688.2	690.6	690.4	687.9	684.2	679.9	675.5
12.5°	664.2	667.6	673.2	678.7	685.7	688.3	688.1	685.5	681.7	677.2	672.6
13°	660.9	664.5	670.2	675.9	683.2	686.0	685.6	683.0	678.9	674.3	669.6
13.5°	657.6	661.2	667.1	673.1	680.5	683.4	683.1	680.3	676.3	671.5	666.7
14°	654.2	657.9	664.0	670.0	677.7	680.7	680.4	677.5	673.3	668.4	663.5
14.5°	650.7	654.4	660.7	667.1	674.9	677.9	677.5	674.7	670.2	665.3	660.0
15°	647.0	650.9	657.4	663.8	671.9	675.0	674.7	671.6	667.2	662.0	656.7
15.5°	643.4	647.4	653.9	660.6	668.8	671.9	671.6	668.5	664.0	658.7	653.3
16°	639.6	643.6	650.3	657.0	665.6	668.9	668.4	665.3	660.5	655.3	649.7
16.5°	635.8	639.9	646.8	653.8	662.2	665.6	665.1	662.0	657.2	651.7	646.1
17°	631.8	636.1	643.1	650.1	658.8	662.3	661.8	658.6	653.7	648.2	642.5
17.5°	627.9	632.2	639.3	646.4	655.3	658.7	658.3	654.9	650.1	644.5	638.7
18°	623.8	628.3	635.5	642.6	651.6	655.1	654.6	651.3	646.4	640.8	634.7
18.5°	619.7	624.2	631.6	638.9	647.9	651.4	651.0	647.7	642.6	636.9	630.9
19°	615.6	620.3	627.6	635.0	644.1	647.7	647.3	643.8	638.8	633.1	626.9
19.5°	611.5	616.2	623.6	631.2	640.2	643.8	643.4	640.1	634.9	629.1	622.9
20°	607.2	612.0	619.4	627.0	636.4	639.9	639.5	636.2	630.9	625.1	618.8
20.5°	602.9	607.7	615.3	622.8	632.2	636.0	635.5	632.1	627.0	621.0	614.7
21°	598.5	603.5	611.1	618.8	628.2	631.8	631.4	628.1	622.8	616.9	610.4



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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°	585.2	590.4	598.1	605.8	615.4	619.0	618.7	615.3	610.3	604.1	597.5
23°	580.8	586.1	593.6	601.4	610.9	614.6	614.3	611.0	605.9	599.7	592.9
23.5°	576.2	581.6	589.1	596.9	606.5	610.3	609.8	606.6	601.4	595.3	588.5
24°	571.7	577.0	584.5	592.3	602.2	605.8	605.5	602.0	597.0	590.9	583.9
24.5°	567.1	572.4	580.0	587.9	597.6	601.0	600.9	597.5	592.5	586.2	579.4
25°	562.4	567.8	575.3	583.1	592.9	596.4	596.2	592.9	588.0	581.7	574.8
25.5°	557.8	563.2	570.7	578.5	588.2	591.7	591.5	588.3	583.4	577.0	570.2
26°	553.0	558.7	566.0	573.8	583.5	586.8	586.7	583.7	578.7	572.3	565.4
26.5°	548.2	553.9	561.1	569.0	578.7	582.1	582.0	578.9	573.9	567.5	560.7
27°	543.5	549.2	556.3	564.2	573.9	577.1	577.2	573.9	569.2	562.7	555.9
27.5°	538.6	544.4	551.5	559.1	568.9	572.2	572.3	569.1	564.4	557.9	551.0
28°	533.7	539.5	546.5	554.2	564.0	567.4	567.2	564.3	559.5	553.0	546.0
28.5°	528.7	534.5	541.5	549.1	558.9	562.1	562.1	559.3	554.6	548.0	541.2
29°	523.7	529.7	536.5	544.1	553.9	557.0	557.1	554.1	549.6	543.0	536.2
29.5°	518.7	524.5	531.5	538.8	548.7	551.7	551.9	549.0	544.6	538.0	531.2
30°	513.7	519.5	526.4	533.7	543.6	546.7	546.6	543.9	539.5	532.9	525.9
30.5°	508.3	514.4	521.1	528.6	538.1	541.2	541.2	538.7	534.1	527.6	520.7
31°	503.0	509.2	515.9	523.2	532.9	535.7	535.9	533.2	529.0	522.5	515.6
31.5°	497.8	504.0	510.5	517.7	527.3	530.3	530.4	528.0	523.6	517.2	510.4
32°	492.5	498.7	505.1	512.3	521.9	525.0	524.9	522.5	518.4	511.7	505.0
32.5°	487.0	493.2	499.7	506.8	516.3	519.2	519.1	517.1	512.9	506.4	499.5
33°	481.5	487.8	494.2	501.3	510.7	513.5	513.7	511.4	507.4	501.0	494.0
33.5°	475.9	482.1	488.6	495.5	504.8	507.7	507.8	505.8	501.6	495.5	488.6
34°	470.2	476.6	483.0	490.0	499.1	502.0	501.9	500.0	496.0	489.8	483.0
34.5°	464.4	470.9	477.2	483.9	493.2	495.8	496.0	494.0	490.2	484.0	477.3
35°	458.5	465.1	471.4	478.1	487.0	489.9	490.0	488.1	484.5	478.4	471.4
35.5°	452.5	459.2	465.6	472.0	481.0	483.6	483.8	482.1	478.4	472.6	465.6
36°	446.4	453.3	459.5	465.9	474.9	477.5	477.6	476.0	472.5	466.8	459.9
36.5°	440.1	447.0	453.4	459.6	468.7	470.9	471.3	469.6	466.3	460.6	454.0
37°	433.9	440.7	447.2	453.3	462.0	464.5	464.7	463.2	460.3	454.5	447.8
37.5°	427.5	434.2	440.8	446.9	455.5	457.7	458.0	456.7	453.7	448.4	441.6
38°	420.8	427.8	434.3	440.1	448.7	451.0	451.4	450.0	447.1	442.0	435.6
38.5°	414.1	421.1	427.6	433.3	441.8	444.2	444.6	443.1	440.6	435.5	428.9
39°	407.1	414.3	420.7	426.5	434.8	436.9	437.4	436.2	433.9	428.9	422.2
39.5°	399.8	406.7	413.3	419.0	427.4	429.7	430.2	429.0	426.9	421.9	415.0
40°	392.3	399.3	405.7	411.4	420.1	422.3	422.7	421.8	419.4	414.7	408.3
40.5°	384.2	391.4	397.9	403.6	412.2	414.5	415.3	414.2	412.0	407.3	400.5
41°	376.5	383.5	390.0	395.9	404.5	406.8	407.4	406.4	404.4	399.5	392.8
41.5°	368.8	375.6	382.1	388.1	396.8	399.1	399.8	398.6	396.5	391.5	384.9
42°	361.0	367.7	374.2	380.2	389.0	391.7	392.3	391.3	388.9	384.0	377.6
42.5°	352.5	359.4	366.0	372.1	381.3	383.8	384.7	383.7	381.3	376.3	369.6
43°	344.8	351.6	358.3	364.3	373.3	375.9	376.8	375.6	373.3	368.1	361.7
43.5°	337.6	344.4	351.1	357.1	365.8	368.5	369.2	367.8	365.0	359.9	353.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	318.7	325.3	331.7	337.3	345.4	348.0	348.7	347.2	344.3	339.0	333.0
45.5°	312.7	319.4	325.8	331.4	339.2	341.7	342.4	341.0	338.0	333.0	326.8
46°	307.2	313.9	320.1	325.6	333.3	335.6	336.4	334.9	332.0	327.0	320.9
46.5°	301.6	308.3	314.4	319.8	327.4	329.9	330.6	329.2	326.2	321.2	315.2
47°	296.2	302.8	309.0	314.3	321.7	324.1	324.9	323.5	320.5	315.7	309.7
47.5°	290.7	297.3	303.4	308.8	316.0	318.6	319.3	317.7	314.8	310.1	304.2
48°	285.2	291.8	297.7	303.2	310.4	313.0	313.7	312.2	309.4	304.7	298.7
48.5°	279.0	285.5	291.7	297.3	304.8	307.5	308.2	306.8	303.9	299.2	293.3
49°	272.3	278.4	284.7	290.8	298.7	301.6	302.6	301.1	297.9	293.0	287.3
49.5°	265.5	271.2	277.6	284.0	292.3	295.4	296.3	294.6	291.4	286.3	280.5
50°	257.7	263.2	269.6	276.6	285.7	289.1	290.0	288.2	284.7	279.5	273.8
50.5°	249.5	255.1	261.7	268.9	278.5	282.0	282.7	281.5	277.6	272.5	266.3
51°	241.1	246.9	253.1	260.6	270.7	273.9	275.1	273.8	270.2	264.7	258.6
51.5°	232.5	238.3	244.6	251.8	262.5	265.9	267.4	265.6	262.4	256.7	250.6
52°	223.8	229.4	235.6	242.7	253.5	257.6	259.1	257.4	254.0	248.4	242.4
52.5°	214.9	220.5	226.9	233.4	244.4	249.1	250.5	248.8	245.0	239.7	234.0
53°	205.9	211.4	217.4	223.7	234.9	240.2	242.1	239.9	235.5	230.5	225.5
53.5°	196.8	202.1	208.2	214.0	225.3	231.4	233.6	231.1	226.2	221.5	216.5
54°	187.6	192.9	198.5	204.1	215.6	222.0	224.6	221.5	216.7	212.2	207.5
54.5°	178.6	184.0	188.9	194.4	206.0	212.7	215.4	212.2	207.0	202.8	198.3
55°	169.5	174.6	179.1	184.5	196.3	203.6	206.4	203.0	197.7	193.4	189.3
55.5°	160.3	165.4	169.6	174.8	186.9	194.0	197.3	193.6	188.5	183.8	180.0
56°	151.4	156.0	160.0	164.9	177.2	184.4	187.7	183.8	179.0	174.1	170.7
56.5°	142.5	147.0	150.3	155.4	167.7	175.2	178.4	174.5	169.7	164.6	161.4
57°	133.8	137.7	140.7	146.0	158.2	165.4	168.9	165.3	160.5	155.3	152.4
57.5°	125.1	128.8	131.6	136.9	149.3	156.1	159.6	156.2	151.6	146.1	143.0
58°	116.5	119.8	122.6	127.7	140.2	146.6	150.0	146.9	142.5	136.8	134.0
58.5°	108.2	111.2	113.7	119.1	131.5	137.5	140.6	138.1	134.0	128.0	125.3
59°	100.0	102.5	104.9	110.5	122.6	128.4	131.2	129.0	125.2	119.4	116.4
59.5°	92.3	94.2	96.6	101.9	114.0	119.5	122.0	120.6	116.4	111.1	108.0
60°	84.4	85.8	88.4	93.8	105.4	110.7	113.0	111.6	108.0	103.3	100.0
60.5°	76.9	78.0	80.5	85.9	97.4	102.5	104.6	103.5	100.1	95.5	92.1
61°	69.6	70.4	72.7	77.9	89.6	94.2	96.2	95.5	92.2	87.7	84.2
61.5°	62.6	63.2	65.5	71.0	81.6	86.0	87.7	87.4	84.3	80.0	76.3
62°	55.7	56.1	58.6	63.8	73.6	77.8	79.3	79.3	76.4	72.2	68.4
62.5°	49.3	49.5	51.9	56.9	66.1	69.6	70.9	71.2	68.6	65.1	61.5
63°	43.0	43.1	45.7	50.5	59.0	62.2	63.3	63.8	60.5	58.4	54.8
63.5°	36.6	37.3	39.7	44.4	52.0	54.8	56.1	56.4	52.9	51.9	48.5
64°	31.2	32.6	35.0	38.4	45.5	48.1	49.3	49.6	45.5	45.6	42.5
64.5°	25.9	28.0	30.3	33.6	39.2	41.6	42.8	42.9	38.4	39.8	36.9
65°	20.6	23.6	25.6	28.8	33.5	35.4	36.7	36.7	31.6	34.0	31.7
65.5°	15.2	19.0	20.9	24.0	27.9	29.7	30.9	30.7	25.5	28.8	27.0
66°	11.2	14.4	16.2	19.2	22.8	24.4	25.6	25.2	19.8	23.8	22.3



TEST NUMBER: P775724

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	3.5	6.1	7.0	7.8	11.9	12.9	13.9	13.5	9.1	13.2	12.5
68°	2.8	4.2	4.9	5.2	8.8	9.6	10.3	10.2	5.4	10.1	9.7
68.5°	2.0	3.2	3.0	3.3	5.7	6.3	6.9	6.9	1.8	7.0	6.8
69°	1.3	2.3	2.3	2.6	2.6	3.1	3.5	3.6	0.9	4.1	4.1
69.5°	0.5	1.4	1.7	1.8	1.3	1.6	1.8	2.0	0.5	2.5	2.3
70°	0.4	0.5	1.1	1.1	0.6	0.7	0.9	1.0	0.4	1.3	1.3
70.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.6	0.6
71°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
71.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
72°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
72.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
73°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
73.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
74°	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
74.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
75°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
75.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
76°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
76.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
77°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
77.5°	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2
78°	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
78.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
79°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
79.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
80°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
80.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
81°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
81.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
82°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
82.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
83°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
83.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
84°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1
84.5°	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1
85°	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
85.5°	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
86°	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
86.5°	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
87°	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
87.5°	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
88°	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
88.5°	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1



TEST NUMBER: P775724

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.1	0.3	0.3	0.2	0.1	0.0	0.0	0.1	0.0	0.2	0.1



TEST NUMBER: P775724

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	709.8	709.8	709.8	709.8	709.8	709.8
0.5°	709.4	709.7	709.4	709.0	709.1	709.3
1°	709.1	709.2	708.8	708.3	708.5	708.8
1.5°	708.6	708.5	707.9	707.5	707.6	708.1
2°	708.0	707.7	707.1	706.6	706.9	707.3
2.5°	707.3	706.7	706.1	705.6	705.8	706.4
3°	706.4	705.8	705.0	704.5	704.7	705.5
3.5°	705.6	704.6	703.9	703.3	703.5	704.3
4°	704.5	703.4	702.6	702.1	702.3	703.0
4.5°	703.3	702.1	701.2	700.6	700.9	701.6
5°	702.1	700.7	699.8	699.2	699.4	700.2
5.5°	700.7	699.1	698.2	697.5	697.7	698.6
6°	699.2	697.5	696.5	695.9	696.0	696.8
6.5°	697.5	695.8	694.8	694.1	694.1	695.1
7°	695.8	693.8	692.9	692.1	692.2	693.2
7.5°	694.0	691.8	690.9	690.1	690.2	691.1
8°	691.9	689.8	688.7	688.0	688.0	688.9
8.5°	689.8	687.6	686.6	685.7	685.7	686.6
9°	687.6	685.2	684.2	683.5	683.3	684.2
9.5°	685.2	682.8	681.8	681.1	680.8	681.7
10°	682.8	680.2	679.2	678.5	678.2	679.0
10.5°	680.2	677.5	676.6	675.8	675.5	676.3
11°	677.4	674.8	673.8	673.1	672.6	673.4
11.5°	674.7	671.8	670.9	670.2	669.7	670.4
12°	671.9	668.9	667.9	667.2	666.7	667.4
12.5°	668.8	665.7	664.8	664.1	663.6	664.2
13°	665.7	662.5	661.8	661.0	660.3	660.9
13.5°	662.4	659.1	658.4	657.6	657.0	657.6
14°	659.1	655.7	655.0	654.2	653.5	654.2
14.5°	655.8	652.3	651.6	650.8	650.0	650.7
15°	652.2	648.6	648.0	647.1	646.3	647.0
15.5°	648.5	645.0	644.3	643.5	642.7	643.4
16°	644.9	641.2	640.4	639.7	638.9	639.6
16.5°	641.2	637.3	636.7	636.0	635.0	635.8
17°	637.4	633.5	632.8	632.0	631.2	631.8
17.5°	633.6	629.4	628.7	628.0	627.0	627.9
18°	629.6	625.4	624.7	623.9	622.9	623.8
18.5°	625.5	621.2	620.4	619.7	618.8	619.7
19°	621.3	617.1	616.2	615.5	614.6	615.6
19.5°	617.3	612.9	612.0	611.2	610.4	611.5
20°	613.1	608.6	607.5	606.7	606.0	607.2
20.5°	608.9	604.2	603.1	602.4	601.6	602.9
21°	604.6	599.6	598.6	597.8	597.1	598.5

TEST NUMBER: P775724

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	591.4	586.2	584.8	583.9	583.6	585.2
23°	586.9	581.5	580.1	578.9	579.0	580.8
23.5°	582.4	576.8	575.3	574.3	574.3	576.2
24°	577.8	572.1	570.4	569.3	569.6	571.7
24.5°	573.2	567.4	565.6	564.5	564.7	567.1
25°	568.6	562.7	560.6	559.4	559.9	562.4
25.5°	563.9	557.9	555.7	554.6	555.2	557.8
26°	559.1	553.0	550.6	549.3	550.3	553.0
26.5°	554.3	548.0	545.7	544.4	545.4	548.2
27°	549.5	543.1	540.4	539.1	540.4	543.5
27.5°	544.7	538.1	535.3	533.9	535.3	538.6
28°	539.8	533.0	530.1	528.7	530.2	533.7
28.5°	534.8	527.8	524.9	523.4	525.1	528.7
29°	529.8	522.7	519.5	517.9	520.0	523.7
29.5°	524.8	517.5	514.2	512.6	514.6	518.7
30°	519.6	512.3	508.7	507.3	509.3	513.7
30.5°	514.4	507.0	503.2	501.7	504.0	508.3
31°	509.3	501.5	497.7	496.1	498.5	503.0
31.5°	503.9	496.1	492.1	490.5	493.0	497.8
32°	498.4	490.6	486.4	484.9	487.5	492.5
32.5°	493.1	485.1	480.7	479.2	481.9	487.0
33°	487.5	479.3	475.1	473.6	476.2	481.5
33.5°	482.0	473.6	469.3	467.7	470.6	475.9
34°	476.2	467.8	463.6	461.9	464.8	470.2
34.5°	470.5	462.0	457.5	456.0	459.0	464.4
35°	464.7	456.0	451.5	450.0	453.0	458.5
35.5°	458.9	449.9	445.6	444.0	447.0	452.5
36°	453.0	443.7	439.5	438.0	441.0	446.4
36.5°	446.8	437.5	433.4	431.8	434.9	440.1
37°	440.5	431.1	427.0	425.6	428.6	433.9
37.5°	434.2	424.6	420.6	419.3	422.2	427.5
38°	427.7	418.1	414.2	412.8	415.7	420.8
38.5°	421.1	411.3	407.5	406.2	409.0	414.1
39°	414.2	404.5	400.9	399.6	402.4	407.1
39.5°	407.4	397.4	393.7	392.7	395.0	399.8
40°	400.2	390.1	386.4	385.3	387.5	392.3
40.5°	392.7	382.5	378.8	377.7	379.8	384.2
41°	384.9	374.7	371.1	370.0	372.2	376.5
41.5°	377.1	367.0	363.3	362.4	364.3	368.8
42°	369.6	359.6	355.9	354.7	356.8	361.0
42.5°	362.0	351.9	348.1	346.6	348.6	352.5
43°	354.2	343.9	340.2	339.0	340.8	344.8
43.5°	346.2	336.2	332.5	331.4	333.4	337.6



TEST NUMBER: P775724

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	325.6	316.4	313.0	312.1	314.2	318.7
45.5°	319.5	310.4	306.9	306.2	308.3	312.7
46°	313.8	304.7	301.4	300.5	302.8	307.2
46.5°	308.0	299.3	295.9	295.1	297.2	301.6
47°	302.8	293.9	290.4	289.7	291.8	296.2
47.5°	297.2	288.3	285.1	284.2	286.5	290.7
48°	291.9	283.2	279.8	278.9	281.0	285.2
48.5°	286.6	277.5	274.4	273.4	275.4	279.0
49°	280.7	271.9	268.6	267.4	269.1	272.3
49.5°	274.2	265.3	262.5	261.2	262.4	265.5
50°	267.5	258.9	255.9	254.6	255.2	257.7
50.5°	260.2	251.4	248.8	247.1	247.3	249.5
51°	252.4	243.7	240.9	239.1	239.2	241.1
51.5°	244.5	235.4	232.7	230.5	230.9	232.5
52°	236.5	227.1	224.0	221.7	221.9	223.8
52.5°	228.0	218.2	215.0	212.7	212.8	214.9
53°	219.5	209.5	206.0	203.4	203.6	205.9
53.5°	210.7	200.5	196.7	194.1	194.4	196.8
54°	201.9	191.7	187.5	184.9	185.1	187.6
54.5°	193.1	182.9	178.5	175.6	175.8	178.6
55°	184.4	174.1	169.2	166.2	166.6	169.5
55.5°	175.5	165.0	160.2	156.7	157.7	160.3
56°	166.4	156.3	151.2	147.6	148.7	151.4
56.5°	157.7	147.7	142.4	138.6	140.0	142.5
57°	148.6	139.1	133.5	129.6	131.1	133.8
57.5°	140.0	130.7	125.0	121.0	122.5	125.1
58°	131.3	122.4	116.6	112.7	114.1	116.5
58.5°	122.6	114.1	108.5	104.4	106.1	108.2
59°	114.1	106.1	100.6	96.5	97.8	100.0
59.5°	106.1	98.3	92.8	88.8	90.2	92.3
60°	98.2	90.6	85.2	81.3	82.7	84.4
60.5°	90.3	82.8	77.9	74.3	75.4	76.9
61°	82.4	75.6	70.8	67.6	68.1	69.6
61.5°	74.5	68.4	64.2	61.3	61.7	62.6
62°	67.2	61.4	57.7	54.9	55.2	55.7
62.5°	60.1	54.7	51.5	49.1	48.9	49.3
63°	53.3	48.3	45.6	43.5	43.0	43.0
63.5°	46.8	42.2	40.2	38.4	37.6	36.6
64°	40.6	36.4	35.6	34.1	33.3	31.2
64.5°	35.1	31.6	31.1	29.7	28.9	25.9
65°	29.6	26.8	26.7	25.5	24.4	20.6
65.5°	24.7	22.1	22.1	21.2	20.0	15.2
66°	20.3	17.3	17.6	17.0	15.6	11.2



TEST NUMBER: P775724

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	11.1	7.8	8.2	8.1	6.7	3.5
68°	8.5	5.5	6.0	5.8	4.7	2.8
68.5°	6.0	3.8	3.9	3.8	3.8	2.0
69°	3.4	3.0	3.1	3.0	3.0	1.3
69.5°	2.0	2.1	2.2	2.1	2.1	0.5
70°	1.1	1.3	1.3	1.3	1.3	0.4
70.5°	0.5	0.4	0.4	0.4	0.4	0.4
71°	0.4	0.4	0.4	0.4	0.4	0.4
71.5°	0.4	0.3	0.3	0.3	0.3	0.3
72°	0.3	0.3	0.3	0.3	0.3	0.3
72.5°	0.3	0.3	0.3	0.3	0.3	0.3
73°	0.3	0.3	0.3	0.3	0.3	0.3
73.5°	0.3	0.3	0.3	0.3	0.3	0.3
74°	0.3	0.3	0.3	0.3	0.2	0.2
74.5°	0.2	0.2	0.2	0.2	0.2	0.2
75°	0.2	0.2	0.2	0.2	0.2	0.2
75.5°	0.2	0.2	0.2	0.2	0.2	0.2
76°	0.2	0.2	0.2	0.2	0.2	0.2
76.5°	0.2	0.2	0.2	0.2	0.2	0.2
77°	0.2	0.2	0.2	0.2	0.2	0.2
77.5°	0.2	0.2	0.2	0.2	0.2	0.2
78°	0.2	0.2	0.2	0.2	0.2	0.2
78.5°	0.1	0.2	0.2	0.2	0.2	0.1
79°	0.1	0.1	0.2	0.2	0.2	0.1
79.5°	0.1	0.1	0.2	0.2	0.1	0.1
80°	0.1	0.1	0.2	0.2	0.1	0.1
80.5°	0.1	0.1	0.2	0.2	0.1	0.1
81°	0.1	0.1	0.2	0.2	0.1	0.1
81.5°	0.1	0.1	0.2	0.2	0.1	0.1
82°	0.1	0.1	0.2	0.2	0.1	0.1
82.5°	0.1	0.1	0.2	0.2	0.1	0.1
83°	0.1	0.1	0.2	0.2	0.1	0.1
83.5°	0.1	0.1	0.2	0.2	0.1	0.1
84°	0.1	0.1	0.2	0.2	0.1	0.1
84.5°	0.1	0.1	0.2	0.2	0.1	0.1
85°	0.1	0.1	0.2	0.2	0.2	0.1
85.5°	0.1	0.1	0.2	0.2	0.2	0.1
86°	0.1	0.1	0.2	0.2	0.2	0.1
86.5°	0.1	0.1	0.2	0.3	0.2	0.1
87°	0.1	0.1	0.3	0.3	0.3	0.1
87.5°	0.1	0.2	0.3	0.4	0.3	0.1
88°	0.1	0.2	0.4	0.5	0.4	0.1
88.5°	0.1	0.2	0.5	0.6	0.5	0.1



TEST NUMBER: P775724

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.1	0.4	0.7	0.5	0.7	0.1



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— 0°-180° - - 45°-225° - - - - 90°-270° - · - · 135°-315°

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21.5°	594.2	599.2	606.7	614.4	624.0	627.5	627.1	623.8	618.6	612.7	606.1
22°	589.7	594.8	602.4	610.3	619.7	623.4	622.9	619.5	614.4	608.4	601.7



44°	330.9	337.8	344.3	350.2	358.8	361.4	362.1	360.6	357.6	352.4	346.3
44.5°	324.6	331.4	337.9	343.6	351.9	354.5	355.1	353.9	350.8	345.5	339.1



66.5°	8.1	11.1	12.7	14.4	18.2	19.5	20.7	20.2	16.2	19.3	18.2
67°	5.5	8.3	9.7	10.9	15.1	16.2	17.3	16.8	12.6	16.2	15.4



89°	0.1	0.2	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.1
89.5°	0.1	0.3	0.3	0.2	0.1	0.0	0.0	0.1	0.0	0.1	0.1

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21.5°	600.3	595.1	594.1	593.2	592.8	594.2
22°	595.8	590.6	589.5	588.4	588.1	589.7



44°	338.8	329.2	325.8	324.5	326.8	330.9
44.5°	332.0	322.7	319.2	318.2	320.4	324.6



66.5°	16.3	13.5	14.2	13.6	12.3	8.1
67°	13.6	10.3	11.0	10.7	9.3	5.5

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89°	0.1	0.3	0.5	0.7	0.5	0.1
89.5°	0.1	0.3	0.6	0.7	0.6	0.1

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(END OF REPORT)