

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: P775850

Luminaire Tested: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-2700K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775850
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B068)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-2700K
Description: 8 INCH ROUND NARROW LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

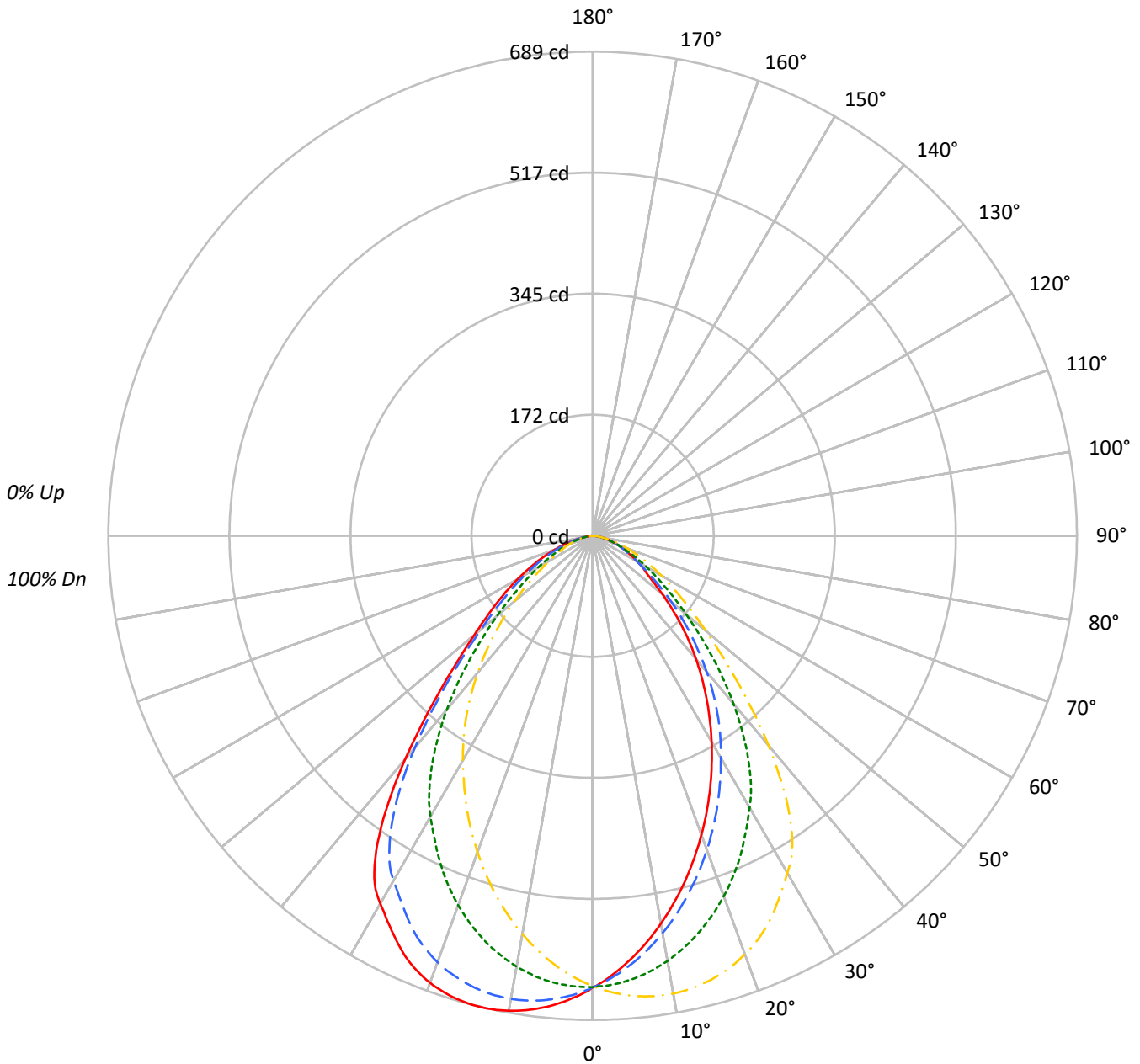
Lumens per Lamp: N/A
Luminaire Lumens: 1114.0 lumens
Efficiency: N/A
Efficacy: 111.4 lumens/watt
Spacing Criteria (0/90/45): 1.11 / 1.08 / 1.14
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P775850
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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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			100
1	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89			89
2	103	96	91	86	101	95	90	85	91	87	83	88	85	82	85	82	80	78			78
3	96	87	80	75	93	85	79	74	83	77	73	80	75	72	78	74	71	69			69
4	89	79	71	66	87	77	71	65	75	69	64	73	68	64	71	66	63	61			61
5	83	72	64	58	81	71	63	58	69	62	57	67	61	57	65	60	56	54			54
6	77	66	58	52	75	65	57	52	63	56	52	61	56	51	60	55	51	49			49
7	72	60	52	47	71	59	52	47	58	51	47	57	51	46	55	50	46	44			44
8	68	56	48	43	66	55	48	43	54	47	42	52	47	42	51	46	42	40			40
9	64	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	39	37			37
10	60	48	41	36	59	47	41	36	46	40	36	46	40	36	45	39	35	34			34

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	19616	19616	19616	19616
5°	18575	19421	20564	19556
10°	17370	19041	21276	19298
15°	16069	18471	21762	18832
20°	14715	17733	21989	18168
25°	13326	16816	21802	17288
30°	11933	15758	21297	16262
35°	10529	14375	19880	14845
40°	9123	12423	16528	12853
45°	7638	10254	12974	10591
50°	6165	8245	10454	8426
55°	5057	6653	8820	6696
60°	4500	5386	7486	5398
65°	3887	4349	6263	4327
70°	3365	3472	5052	3446
75°	2890	2760	3845	2725
80°	2391	2215	2479	2127
85°	1681	1681	736	1541

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 180°
 Vertical Angle: 45°
 Luminance: 12974 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.3	5.4
10°-20°	167.0	15.0
20°-30°	236.0	21.2
30°-40°	248.1	22.3
40°-50°	187.0	16.8
50°-60°	115.9	10.4
60°-70°	65.2	5.9
70°-80°	28.8	2.6
80°-90°	5.7	0.5
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°	463.3	41.6
0°-40°	711.3	63.9
0°-60°	1014.3	91.1
0°-90°	1114.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1114.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	642	642	642	642	642	
5°	606	634	671	638	606	56
15°	508	584	688	596	508	142
25°	396	499	647	513	396	181
35°	282	386	533	398	282	176
45°	177	238	300	245	177	137
55°	95	125	166	126	95	87
65°	54	60	87	60	54	54
75°	24	23	33	23	24	26
85°	5	5	2	4	5	6
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°	642.5	642.5	642.5	642.5	642.5	642.5	642.5	642.5	642.5	642.5	642.5
0.5°	640.4	640.7	640.6	640.6	641.6	642.3	643.0	646.3	647.0	647.0	645.6
1°	637.0	637.5	638.0	639.0	641.2	643.2	645.0	649.1	650.0	649.9	647.8
1.5°	633.5	634.1	635.3	637.3	640.7	644.0	647.0	651.8	653.1	652.8	650.1
2°	629.8	630.6	632.4	635.4	640.1	644.7	648.8	654.3	656.0	655.5	652.1
2.5°	626.1	627.0	629.5	633.4	639.3	645.2	650.4	656.7	658.7	658.1	654.2
3°	622.3	623.4	626.3	631.4	638.4	645.6	652.0	658.9	661.5	660.6	655.9
3.5°	618.4	619.7	623.3	629.2	637.5	645.9	653.5	661.2	664.0	663.0	657.6
4°	614.4	615.8	620.0	627.0	636.3	646.1	654.8	663.2	666.4	665.3	659.2
4.5°	610.3	611.8	616.6	624.6	635.1	646.2	656.1	665.2	668.7	667.4	660.8
5°	606.1	607.9	613.1	622.1	633.7	646.1	657.1	667.0	671.0	669.5	662.1
5.5°	601.9	603.8	609.7	619.5	632.3	646.0	658.1	668.7	673.1	671.4	663.4
6°	597.6	599.5	606.0	616.7	630.7	645.6	659.0	670.3	675.0	673.2	664.5
6.5°	593.2	595.2	602.3	613.9	629.0	645.2	659.7	671.7	676.8	674.9	665.6
7°	588.6	590.9	598.4	611.0	627.3	644.7	660.3	673.1	678.6	676.4	666.4
7.5°	584.2	586.6	594.6	608.0	625.3	644.1	660.8	674.3	680.2	677.9	667.2
8°	579.5	582.0	590.6	604.9	623.3	643.2	661.2	675.4	681.7	679.2	667.8
8.5°	574.8	577.5	586.6	601.7	621.2	642.4	661.4	676.3	683.0	680.4	668.3
9°	569.9	572.8	582.3	598.4	618.9	641.4	661.5	677.2	684.2	681.4	668.8
9.5°	565.2	568.1	578.2	595.0	616.6	640.3	661.5	677.9	685.3	682.3	669.0
10°	560.3	563.3	573.9	591.4	614.2	639.0	661.4	678.4	686.3	683.1	669.2
10.5°	555.3	558.5	569.5	588.0	611.6	637.6	661.2	678.9	687.1	683.8	669.2
11°	550.3	553.6	565.0	584.3	608.9	636.2	660.8	679.2	687.8	684.3	669.1
11.5°	545.3	548.7	560.6	580.5	606.2	634.6	660.4	679.4	688.4	684.8	668.8
12°	540.2	543.6	556.0	576.6	603.4	633.0	659.8	679.4	688.8	685.0	668.5
12.5°	534.9	538.6	551.3	572.8	600.4	631.2	659.0	679.4	689.1	685.2	668.0
13°	529.5	533.4	546.6	568.7	597.4	629.3	658.2	679.2	689.3	685.2	667.4
13.5°	524.4	528.1	541.9	564.8	594.4	627.3	657.2	678.9	689.3	685.1	666.7
14°	519.1	523.0	537.1	560.6	591.0	625.2	656.1	678.4	689.2	684.8	665.8
14.5°	513.7	517.7	532.1	556.4	587.7	622.9	654.9	677.9	688.9	684.4	664.8
15°	508.4	512.5	527.1	552.1	584.4	620.6	653.6	677.1	688.5	683.9	663.7
15.5°	502.8	507.1	522.1	547.7	580.9	618.1	652.1	676.3	688.0	683.3	662.5
16°	497.4	501.7	517.1	543.3	577.3	615.6	650.6	675.3	687.3	682.5	661.1
16.5°	491.9	496.3	512.1	538.9	573.6	612.9	648.9	674.2	686.6	681.6	659.6
17°	486.4	491.0	507.1	534.3	569.9	610.2	647.1	673.0	685.6	680.5	658.0
17.5°	480.8	485.5	501.8	529.7	566.1	607.4	645.2	671.6	684.4	679.3	656.2
18°	475.2	480.0	496.7	524.9	562.2	604.4	643.2	670.1	683.2	677.9	654.4
18.5°	469.6	474.4	491.4	520.3	558.1	601.4	641.0	668.4	681.8	676.4	652.4
19°	464.1	468.9	486.2	515.5	554.1	598.2	638.7	666.6	680.3	674.8	650.2
19.5°	458.3	463.3	480.9	510.7	550.0	595.0	636.3	664.7	678.7	673.0	647.9
20°	452.9	457.8	475.5	505.9	545.8	591.6	633.8	662.6	676.8	670.9	645.5
20.5°	447.1	452.3	470.2	500.9	541.4	588.2	631.2	660.4	674.8	668.8	643.0
21°	441.5	446.7	464.8	495.9	537.1	584.6	628.3	658.0	672.6	666.6	640.2



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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°	424.3	429.7	448.5	480.8	523.5	573.2	619.2	649.7	664.8	658.5	631.0
23°	418.6	424.1	443.0	475.6	518.8	569.2	615.8	646.5	661.8	655.4	627.6
23.5°	412.9	418.3	437.4	470.4	514.0	565.1	612.2	643.2	658.5	652.1	624.0
24°	407.2	412.7	432.1	465.2	509.2	560.8	608.5	639.4	655.0	648.4	620.1
24.5°	401.4	407.0	426.4	459.9	504.3	556.3	604.5	635.5	651.2	644.6	616.0
25°	395.6	401.3	420.9	454.5	499.2	551.7	600.3	631.4	647.2	640.5	611.7
25.5°	389.9	395.5	415.3	449.1	493.9	546.8	595.9	627.3	643.1	636.5	607.3
26°	384.2	390.0	409.7	443.7	488.8	541.9	591.4	622.8	638.9	632.0	602.7
26.5°	378.4	384.3	404.1	438.3	483.4	536.8	586.7	618.3	634.6	627.7	598.2
27°	372.8	378.5	398.6	432.8	478.0	531.8	582.1	613.9	630.2	623.4	593.5
27.5°	367.0	372.8	393.0	427.2	472.8	526.8	577.4	609.6	625.8	618.9	588.9
28°	361.2	367.2	387.3	421.7	467.5	521.8	572.8	605.0	621.3	614.4	584.3
28.5°	355.4	361.4	381.7	416.2	462.3	516.7	567.9	600.6	617.0	610.1	579.8
29°	349.8	355.8	376.2	410.8	457.1	511.8	563.3	596.1	612.5	605.6	575.1
29.5°	344.2	350.1	370.6	405.4	452.0	506.9	558.6	591.8	608.2	601.2	570.6
30°	338.5	344.5	365.0	400.2	447.0	502.1	554.1	587.6	604.1	597.1	566.4
30.5°	332.7	338.9	359.5	394.8	441.8	497.3	549.7	583.6	600.2	593.2	562.2
31°	327.1	333.3	354.2	389.6	436.7	492.6	545.5	579.2	595.9	588.7	557.4
31.5°	321.5	327.7	348.8	384.1	431.1	487.2	540.5	573.8	590.8	583.5	551.9
32°	315.9	322.2	343.3	378.6	425.3	481.5	534.9	567.6	584.8	577.4	545.5
32.5°	310.1	316.5	337.9	372.8	419.1	475.0	528.5	561.0	578.0	570.5	538.7
33°	304.6	311.1	332.3	367.2	412.8	468.4	521.7	553.3	570.3	562.9	531.3
33.5°	299.2	305.7	326.9	361.2	406.1	461.2	514.2	545.2	562.0	554.7	523.3
34°	293.6	300.2	321.2	355.0	399.4	453.9	506.4	536.2	553.0	546.0	515.1
34.5°	288.1	294.8	315.5	348.9	392.6	446.3	498.0	526.9	543.5	536.7	506.5
35°	282.5	289.3	309.8	342.8	385.7	438.3	489.4	516.8	533.4	526.6	497.7
35.5°	277.0	283.8	304.1	336.5	378.4	430.4	480.2	506.5	522.6	516.6	488.4
36°	271.7	278.3	298.4	330.2	371.3	422.3	471.0	495.7	511.5	505.9	478.6
36.5°	266.2	272.9	292.7	323.8	363.9	413.9	461.6	484.9	500.1	494.8	468.6
37°	260.9	267.5	287.0	317.6	356.6	405.3	451.4	473.3	488.4	483.4	458.5
37.5°	255.4	262.0	281.1	311.2	349.2	396.8	441.4	461.7	476.5	471.6	448.0
38°	250.1	256.6	275.4	304.7	341.6	388.0	430.9	450.1	464.4	459.8	437.4
38.5°	244.7	251.0	269.6	298.1	334.2	379.3	420.5	438.9	452.2	447.9	426.5
39°	239.4	245.7	263.8	291.7	327.0	370.4	410.1	426.7	439.6	435.8	415.6
39.5°	234.2	240.3	258.1	285.3	319.4	361.4	399.5	415.0	427.1	423.4	404.6
40°	228.9	234.9	252.1	278.8	311.7	352.4	388.9	403.0	414.7	411.2	393.5
40.5°	223.5	229.5	246.4	272.1	304.2	343.5	378.0	391.6	402.2	399.1	382.3
41°	218.3	224.1	240.6	265.7	296.6	334.5	367.6	379.7	390.2	387.1	371.2
41.5°	213.0	218.8	235.0	259.3	289.2	325.4	357.2	368.0	377.7	375.0	360.2
42°	207.7	213.5	229.3	252.9	281.6	316.5	346.9	356.8	366.0	363.1	349.4
42.5°	202.6	208.3	223.5	246.7	274.1	307.6	336.8	345.8	354.3	351.5	338.7
43°	197.4	203.1	218.1	240.4	266.7	299.0	326.6	335.0	342.9	340.4	328.1
43.5°	192.3	197.9	212.6	234.2	259.2	290.3	316.7	324.4	331.7	329.1	317.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	176.9	182.6	196.3	215.7	237.5	265.0	288.4	294.3	300.5	298.2	288.2
45.5°	171.9	177.4	191.0	209.8	230.5	257.0	279.4	285.0	290.8	288.3	278.7
46°	167.0	172.5	185.7	204.0	223.5	249.2	270.7	275.9	281.5	279.1	269.5
46.5°	162.2	167.7	180.7	198.2	216.8	241.3	262.2	267.0	272.5	270.0	260.6
47°	157.3	162.7	175.4	192.2	210.1	233.6	253.9	258.8	264.0	261.4	252.3
47.5°	152.5	158.1	170.3	186.8	203.6	226.2	245.9	250.8	256.0	253.2	244.1
48°	147.8	153.4	165.3	181.1	197.4	219.3	238.2	243.1	248.2	245.5	236.2
48.5°	143.2	148.8	160.3	175.6	191.4	212.3	230.9	235.7	240.6	237.8	228.4
49°	138.5	144.4	155.5	170.2	185.3	205.4	223.5	228.7	233.7	230.8	221.3
49.5°	134.3	140.0	150.6	165.0	179.3	199.1	216.7	221.7	226.7	223.5	214.1
50°	129.8	135.6	145.9	159.7	173.6	192.8	210.0	215.2	220.1	217.0	207.4
50.5°	125.5	131.5	141.2	154.5	168.1	186.6	203.4	208.8	213.7	210.5	200.9
51°	121.4	127.2	136.7	149.5	162.7	180.6	197.2	202.8	207.6	204.3	194.7
51.5°	117.5	123.2	132.2	144.7	157.5	174.9	191.3	196.9	201.8	198.5	188.7
52°	113.6	119.1	127.7	140.0	152.4	169.3	185.4	191.4	196.1	192.7	182.9
52.5°	109.9	115.3	123.5	135.3	147.5	164.1	179.8	185.8	190.7	187.1	177.2
53°	106.5	111.5	119.3	130.7	142.7	158.8	174.3	180.6	185.4	181.8	171.8
53.5°	103.2	107.8	115.2	126.3	138.1	153.7	169.1	175.5	180.3	176.6	166.5
54°	100.2	104.2	111.2	122.0	133.6	148.7	164.0	170.5	175.4	171.6	161.6
54.5°	97.5	100.8	107.3	118.0	129.3	144.1	159.0	165.7	170.5	166.7	156.7
55°	95.0	97.6	103.6	113.9	125.0	139.4	154.3	161.0	165.7	162.0	151.9
55.5°	92.7	94.4	100.0	110.1	120.9	134.9	149.7	156.4	161.1	157.4	147.3
56°	90.6	91.5	96.5	106.2	116.8	130.6	145.1	152.0	156.5	153.0	142.8
56.5°	89.0	88.7	93.2	102.6	112.9	126.3	140.7	147.6	152.0	148.4	138.4
57°	87.1	86.1	89.9	99.0	109.0	122.1	136.4	143.3	147.6	144.1	134.2
57.5°	84.9	83.7	86.8	95.5	105.3	118.1	132.2	139.2	143.3	140.0	130.1
58°	82.7	81.7	83.8	92.1	101.7	114.3	128.1	135.0	139.0	135.9	126.1
58.5°	80.5	79.7	80.9	88.9	98.2	110.5	124.2	130.9	134.7	131.7	122.0
59°	78.3	77.7	78.1	85.7	94.8	106.8	120.2	126.9	130.6	127.6	118.2
59.5°	75.9	75.5	75.4	82.6	91.5	103.2	116.4	122.9	126.5	123.6	114.4
60°	73.7	73.5	72.8	79.6	88.2	99.7	112.7	119.1	122.6	119.8	110.7
60.5°	71.5	71.4	70.4	76.7	85.2	96.4	108.9	115.3	118.6	115.9	107.1
61°	69.4	69.3	68.0	73.7	82.2	93.0	105.3	111.6	114.8	112.2	103.5
61.5°	67.3	67.3	65.7	71.0	79.1	89.7	101.8	107.9	111.0	108.6	100.1
62°	65.3	65.3	63.6	68.3	76.0	86.7	98.5	104.3	107.3	105.1	96.7
62.5°	63.2	63.3	61.5	65.7	73.3	83.6	95.1	100.7	103.7	101.3	93.4
63°	61.3	61.4	59.5	63.2	70.5	80.6	91.8	97.3	100.1	97.9	90.2
63.5°	59.3	59.5	57.6	60.8	67.8	77.6	88.6	94.0	96.6	94.5	87.1
64°	57.5	57.6	55.9	58.5	65.2	74.5	85.5	90.6	93.2	91.2	84.0
64.5°	55.6	55.8	54.2	56.3	62.6	71.7	82.4	87.5	89.9	88.0	81.0
65°	53.8	54.1	52.6	54.1	60.2	69.0	79.3	84.4	86.7	84.9	77.9
65.5°	52.1	52.3	51.0	52.0	57.8	66.3	76.3	81.3	83.5	81.8	74.7
66°	50.3	50.6	49.4	50.0	55.4	63.6	73.4	78.2	80.4	78.7	71.9



TEST NUMBER: P775850

CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	45.3	45.7	44.7	44.3	48.8	56.2	65.1	69.1	70.8	69.5	63.6
68°	43.8	44.1	43.3	42.6	46.6	53.8	62.4	66.2	67.8	66.6	60.9
68.5°	42.2	42.5	41.8	40.9	44.6	51.5	59.7	63.5	65.0	63.9	58.4
69°	40.7	41.0	40.3	39.3	42.7	49.2	57.2	60.7	62.1	61.1	55.8
69.5°	39.1	39.5	38.9	37.7	40.8	47.1	54.7	58.1	59.4	58.4	53.4
70°	37.7	38.0	37.5	36.1	38.9	45.0	52.3	55.5	56.6	55.8	51.0
70.5°	36.2	36.6	36.0	34.7	37.2	42.9	49.9	53.0	54.0	53.4	48.7
71°	34.8	35.2	34.7	33.4	35.4	40.9	47.7	50.5	51.4	50.8	46.3
71.5°	33.5	33.9	33.5	32.1	33.8	38.9	45.4	48.2	48.9	48.4	44.1
72°	32.2	32.6	32.2	30.8	32.1	37.0	43.2	45.7	46.3	46.0	41.9
72.5°	30.8	31.2	31.0	29.4	30.5	35.2	41.0	43.5	43.9	43.6	39.7
73°	29.5	29.9	29.7	28.2	29.0	33.4	38.9	41.2	41.5	41.4	37.6
73.5°	28.2	28.6	28.4	27.0	27.5	31.6	36.8	39.0	39.2	39.2	35.7
74°	27.0	27.3	27.2	25.9	26.1	29.9	34.9	36.9	37.0	37.1	33.7
74.5°	25.7	26.1	26.0	24.7	24.7	28.3	32.9	34.9	34.7	35.0	31.7
75°	24.5	24.9	24.9	23.6	23.4	26.7	31.0	32.8	32.6	32.9	29.9
75.5°	23.3	23.7	23.7	22.6	22.2	25.2	29.2	30.9	30.5	31.0	28.1
76°	22.2	22.5	22.6	21.5	20.9	23.7	27.4	29.0	28.4	29.1	26.3
76.5°	21.0	21.4	21.5	20.5	19.8	22.2	25.7	27.1	26.4	27.2	24.6
77°	19.9	20.2	20.4	19.5	18.6	20.9	24.1	25.3	24.5	25.4	23.0
77.5°	18.8	19.1	19.3	18.5	17.5	19.5	22.4	23.6	22.6	23.7	21.4
78°	17.7	18.1	18.3	17.5	16.5	18.3	20.9	21.9	20.8	22.0	19.8
78.5°	16.7	17.0	17.2	16.6	15.4	17.0	19.4	20.3	19.0	20.3	18.4
79°	15.6	16.0	16.2	15.6	14.5	15.8	17.9	18.7	17.3	18.8	16.9
79.5°	14.6	15.0	15.2	14.7	13.5	14.7	16.5	17.2	15.7	17.2	15.6
80°	13.6	13.9	14.2	13.8	12.6	13.6	15.1	15.7	14.1	15.8	14.2
80.5°	12.7	12.9	13.3	12.9	11.7	12.5	13.9	14.2	12.6	14.3	12.9
81°	11.7	12.0	12.4	12.1	10.8	11.5	12.6	12.8	11.1	12.9	11.7
81.5°	10.8	11.1	11.5	11.2	10.0	10.5	11.4	11.4	9.8	11.6	10.5
82°	9.9	10.1	10.6	10.4	9.2	9.5	10.3	10.2	8.5	10.4	9.5
82.5°	9.0	9.2	9.7	9.5	8.4	8.7	9.3	9.0	7.3	9.2	8.5
83°	8.1	8.4	8.9	8.7	7.7	7.9	8.3	7.8	6.0	8.0	7.4
83.5°	7.2	7.5	8.0	8.0	7.0	7.0	7.3	6.6	4.7	6.8	6.4
84°	6.4	6.6	7.2	7.2	6.2	6.2	6.3	5.4	3.7	5.6	5.4
84.5°	5.6	5.8	6.4	6.4	5.5	5.4	5.3	4.3	2.8	4.4	4.6
85°	4.8	5.0	5.6	5.7	4.8	4.7	4.5	3.4	2.1	3.4	3.8
85.5°	4.0	4.1	4.9	4.9	4.1	4.0	3.8	2.7	1.6	2.7	3.1
86°	3.4	3.6	4.2	4.2	3.5	3.3	3.1	2.0	1.3	2.0	2.4
86.5°	2.8	3.0	3.5	3.6	2.9	2.7	2.4	1.4	1.0	1.4	1.8
87°	2.2	2.4	2.9	2.9	2.3	2.1	1.8	0.9	0.7	0.9	1.3
87.5°	1.6	1.8	2.3	2.3	1.7	1.5	1.3	0.5	0.5	0.5	0.8
88°	1.1	1.3	1.7	1.6	1.2	1.0	0.8	0.2	0.2	0.2	0.4
88.5°	0.7	0.8	1.0	1.0	0.6	0.5	0.4	0.1	0.1	0.1	0.1



TEST NUMBER: P775850
CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-2700K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P775850

CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	642.5	642.5	642.5	642.5	642.5	642.5
0.5°	643.5	642.1	640.2	638.5	640.5	640.4
1°	644.7	642.1	638.9	636.2	637.4	637.0
1.5°	645.8	642.1	637.5	633.7	634.2	633.5
2°	646.9	641.8	636.0	631.0	630.9	629.8
2.5°	647.8	641.5	634.3	628.2	627.5	626.1
3°	648.6	641.0	632.6	625.5	624.0	622.3
3.5°	649.2	640.4	630.7	622.6	620.5	618.4
4°	649.8	639.8	628.8	619.6	616.8	614.4
4.5°	650.2	639.0	626.7	616.4	613.0	610.3
5°	650.4	638.1	624.6	613.1	609.2	606.1
5.5°	650.6	637.1	622.2	609.8	605.2	601.9
6°	650.7	635.9	619.9	606.4	601.2	597.6
6.5°	650.6	634.6	617.4	602.8	597.1	593.2
7°	650.4	633.3	614.7	599.3	592.8	588.6
7.5°	650.1	631.7	612.0	595.4	588.6	584.2
8°	649.7	630.1	609.2	591.7	584.2	579.5
8.5°	649.2	628.4	606.2	587.7	579.8	574.8
9°	648.5	626.5	603.1	583.8	575.2	569.9
9.5°	647.7	624.5	599.9	579.6	570.6	565.2
10°	646.8	622.5	596.7	575.6	566.0	560.3
10.5°	645.8	620.3	593.4	571.3	561.3	555.3
11°	644.6	617.9	590.0	567.1	556.5	550.3
11.5°	643.4	615.5	586.4	562.6	551.6	545.3
12°	641.9	613.0	582.8	558.2	546.7	540.2
12.5°	640.5	610.4	579.1	553.7	541.7	534.9
13°	638.8	607.7	575.4	549.1	536.7	529.5
13.5°	637.1	604.9	571.5	544.5	531.6	524.4
14°	635.2	602.0	567.5	539.7	526.4	519.1
14.5°	633.3	599.0	563.4	534.9	521.3	513.7
15°	631.2	595.8	559.4	530.1	516.0	508.4
15.5°	629.0	592.6	555.1	525.0	510.7	502.8
16°	626.7	589.2	550.9	520.1	505.4	497.4
16.5°	624.3	585.9	546.6	515.0	500.0	491.9
17°	621.7	582.3	542.1	510.1	494.7	486.4
17.5°	619.1	578.7	537.7	505.1	489.3	480.8
18°	616.3	575.0	533.0	499.8	483.9	475.2
18.5°	613.5	571.2	528.4	494.6	478.4	469.6
19°	610.4	567.3	523.7	489.5	472.8	464.1
19.5°	607.3	563.4	519.0	484.3	467.3	458.3
20°	604.1	559.2	514.2	479.0	461.8	452.9
20.5°	600.7	555.2	509.4	473.6	456.3	447.1
21°	597.3	550.9	504.4	468.3	450.7	441.5

TEST NUMBER: P775850

CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	586.2	537.7	489.4	452.1	433.9	424.3
23°	582.2	532.9	484.2	446.6	428.1	418.6
23.5°	577.9	528.2	479.0	441.2	422.6	412.9
24°	573.6	523.4	473.7	435.5	417.0	407.2
24.5°	569.0	518.4	468.4	430.2	411.2	401.4
25°	564.2	513.2	463.0	424.5	405.5	395.6
25.5°	559.4	508.1	457.6	418.9	399.9	389.9
26°	554.4	502.9	452.1	413.4	394.2	384.2
26.5°	549.5	497.5	446.6	407.9	388.5	378.4
27°	544.6	492.1	441.0	402.2	382.9	372.8
27.5°	539.6	486.9	435.5	396.5	377.0	367.0
28°	534.6	481.7	430.0	390.9	371.4	361.2
28.5°	529.6	476.4	424.7	385.5	365.6	355.4
29°	524.8	471.3	419.3	379.8	360.1	349.8
29.5°	520.1	466.3	414.1	374.4	354.4	344.2
30°	515.5	461.3	408.8	368.8	348.8	338.5
30.5°	510.7	456.3	403.4	363.4	343.2	332.7
31°	505.3	450.9	397.9	358.0	337.7	327.1
31.5°	499.6	445.3	392.5	352.5	332.1	321.5
32°	493.2	439.1	386.7	347.0	326.5	315.9
32.5°	486.4	432.7	380.7	341.4	320.9	310.1
33°	479.2	426.3	374.7	335.8	315.5	304.6
33.5°	471.8	419.4	368.6	330.2	310.0	299.2
34°	464.1	412.5	362.3	324.5	304.5	293.6
34.5°	456.3	405.5	355.9	318.7	299.0	288.1
35°	448.3	398.3	349.5	312.9	293.6	282.5
35.5°	440.0	391.1	343.1	307.0	288.0	277.0
36°	431.6	383.7	336.6	301.3	282.6	271.7
36.5°	422.9	376.3	330.1	295.4	277.1	266.2
37°	414.1	368.7	323.4	289.4	271.6	260.9
37.5°	405.2	361.2	316.9	283.5	266.1	255.4
38°	396.2	353.4	310.2	277.6	260.6	250.1
38.5°	387.2	345.8	303.6	271.7	255.1	244.7
39°	378.0	338.0	297.1	265.9	249.6	239.4
39.5°	368.8	330.3	290.3	260.0	244.2	234.2
40°	359.2	322.5	283.7	254.1	238.8	228.9
40.5°	349.8	314.6	277.1	248.3	233.3	223.5
41°	340.6	306.7	270.5	242.5	227.8	218.3
41.5°	331.2	298.9	263.9	236.6	222.3	213.0
42°	321.9	291.2	257.4	231.0	217.0	207.7
42.5°	312.4	283.2	251.0	225.3	211.7	202.6
43°	303.2	275.6	244.5	219.5	206.5	197.4
43.5°	294.1	267.9	237.9	213.8	201.3	192.3



TEST NUMBER: P775850

CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	267.7	245.3	218.9	197.2	185.6	176.9
45.5°	259.0	237.8	212.6	191.7	180.6	171.9
46°	250.9	230.6	206.5	186.4	175.5	167.0
46.5°	242.5	223.3	200.4	181.1	170.6	162.2
47°	234.6	216.4	194.4	175.7	165.7	157.3
47.5°	226.8	209.4	188.4	170.4	160.9	152.5
48°	219.5	202.7	182.7	165.3	156.2	147.8
48.5°	212.1	196.1	176.9	160.1	151.4	143.2
49°	205.0	189.8	171.3	155.2	146.9	138.5
49.5°	198.3	183.6	165.7	150.2	142.4	134.3
50°	191.8	177.4	160.3	145.3	137.9	129.8
50.5°	185.3	171.4	154.9	140.4	133.6	125.5
51°	179.3	165.7	149.8	135.8	129.1	121.4
51.5°	173.5	160.2	144.7	131.1	125.0	117.5
52°	167.8	154.8	139.8	126.8	120.9	113.6
52.5°	162.2	149.6	135.0	122.3	116.8	109.9
53°	156.9	144.5	130.3	118.0	112.8	106.5
53.5°	151.7	139.6	125.8	113.8	108.9	103.2
54°	146.9	134.9	121.3	109.8	105.1	100.2
54.5°	142.1	130.4	117.1	105.8	101.5	97.5
55°	137.4	125.8	113.0	102.0	98.1	95.0
55.5°	133.0	121.6	109.0	98.3	94.8	92.7
56°	128.6	117.5	105.1	94.8	91.6	90.6
56.5°	124.4	113.4	101.3	91.4	88.6	89.0
57°	120.3	109.4	97.7	88.0	85.9	87.1
57.5°	116.3	105.7	94.2	84.9	83.2	84.9
58°	112.5	102.1	90.8	81.9	80.8	82.7
58.5°	108.7	98.5	87.5	79.0	78.6	80.5
59°	105.0	94.9	84.3	76.1	76.6	78.3
59.5°	101.5	91.7	81.2	73.3	74.6	75.9
60°	98.0	88.4	78.2	70.8	72.6	73.7
60.5°	94.6	85.2	75.2	68.3	70.6	71.5
61°	91.3	81.9	72.4	65.9	68.6	69.4
61.5°	88.2	79.0	69.6	63.6	66.6	67.3
62°	85.1	76.0	66.9	61.5	64.7	65.3
62.5°	82.1	73.2	64.4	59.3	62.7	63.2
63°	79.0	70.3	61.9	57.3	60.8	61.3
63.5°	75.9	67.6	59.5	55.4	59.0	59.3
64°	73.0	65.0	57.1	53.5	57.1	57.5
64.5°	70.3	62.4	54.9	51.7	55.4	55.6
65°	67.4	59.9	52.7	50.1	53.6	53.8
65.5°	64.8	57.5	50.6	48.5	51.9	52.1
66°	62.2	55.1	48.6	47.0	50.2	50.3



TEST NUMBER: P775850

CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	54.8	48.5	42.9	42.5	45.2	45.3
68°	52.5	46.4	41.1	41.1	43.7	43.8
68.5°	50.2	44.3	39.4	39.7	42.1	42.2
69°	48.0	42.4	37.8	38.2	40.7	40.7
69.5°	45.8	40.5	36.2	36.9	39.2	39.1
70°	43.7	38.6	34.8	35.6	37.7	37.7
70.5°	41.6	36.8	33.4	34.3	36.3	36.2
71°	39.6	35.2	32.0	33.1	35.0	34.8
71.5°	37.7	33.6	30.6	31.8	33.6	33.5
72°	35.8	32.0	29.1	30.5	32.3	32.2
72.5°	34.0	30.4	27.9	29.2	31.0	30.8
73°	32.2	28.7	26.6	28.0	29.7	29.5
73.5°	30.5	27.3	25.4	26.8	28.4	28.2
74°	28.8	25.8	24.3	25.7	27.1	27.0
74.5°	27.2	24.4	23.1	24.5	25.9	25.7
75°	25.6	23.1	22.0	23.3	24.7	24.5
75.5°	24.1	21.8	21.0	22.2	23.5	23.3
76°	22.6	20.6	19.9	21.1	22.3	22.2
76.5°	21.2	19.4	18.9	20.1	21.2	21.0
77°	19.9	18.2	17.9	19.0	20.1	19.9
77.5°	18.6	17.1	17.0	18.0	18.9	18.8
78°	17.3	16.0	16.1	17.0	17.9	17.7
78.5°	16.1	15.0	15.1	16.0	16.8	16.7
79°	14.9	14.0	14.3	15.0	15.8	15.6
79.5°	13.8	13.0	13.4	14.1	14.8	14.6
80°	12.6	12.1	12.5	13.1	13.8	13.6
80.5°	11.6	11.2	11.7	12.2	12.8	12.7
81°	10.6	10.3	10.9	11.3	11.9	11.7
81.5°	9.6	9.5	10.0	10.4	10.9	10.8
82°	8.8	8.7	9.2	9.6	10.0	9.9
82.5°	7.9	7.9	8.4	8.7	9.1	9.0
83°	7.1	7.1	7.7	7.9	8.2	8.1
83.5°	6.2	6.4	6.9	7.1	7.4	7.2
84°	5.4	5.7	6.2	6.3	6.5	6.4
84.5°	4.6	5.0	5.5	5.6	5.7	5.6
85°	3.9	4.4	4.8	4.9	4.9	4.8
85.5°	3.2	3.7	4.1	4.2	4.1	4.0
86°	2.6	3.1	3.4	3.5	3.5	3.4
86.5°	2.0	2.5	2.8	2.9	3.0	2.8
87°	1.5	1.9	2.2	2.3	2.4	2.2
87.5°	0.9	1.4	1.6	1.6	1.8	1.6
88°	0.5	0.8	0.9	1.0	1.3	1.1
88.5°	0.1	0.3	0.4	0.5	0.8	0.7



TEST NUMBER: P775850
CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.1	0.0



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

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21.5°	435.7	441.0	459.2	490.9	532.6	580.9	625.4	655.4	670.2	664.0	637.2
22°	430.0	435.3	453.9	485.9	528.1	577.1	622.4	652.6	667.6	661.4	634.2



44°	187.1	192.7	207.2	227.7	251.9	281.7	307.1	314.0	320.8	318.5	307.4
44.5°	182.0	187.6	201.7	221.9	244.7	273.2	297.7	304.0	310.5	307.9	297.6



66.5°	48.6	48.9	47.8	48.0	53.1	61.0	70.6	75.0	77.2	75.5	69.1
67°	47.0	47.3	46.3	46.1	50.9	58.6	67.8	72.0	73.9	72.4	66.3



89°	0.3	0.4	0.5	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0
89.5°	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	593.6	546.6	499.5	462.9	445.1	435.7
22°	589.9	542.0	494.4	457.5	439.5	430.0



44°	285.1	260.2	231.6	208.3	195.9	187.1
44.5°	276.4	252.6	225.2	202.7	190.8	182.0

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66.5°	59.7	52.9	46.6	45.5	48.5	48.6
67°	57.2	50.7	44.7	44.0	46.9	47.0

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89°	0.0	0.1	0.1	0.1	0.4	0.3
89.5°	0.0	0.0	0.0	0.0	0.1	0.1

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(END OF REPORT)