

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: P775914

Luminaire Tested: HCDJBL510CSD-HCD8TSQMW-1000lm-5000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P775914
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD8TSQMW-1000lm-5000K
Description: 8 INCH SQUARE MEDIUM MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

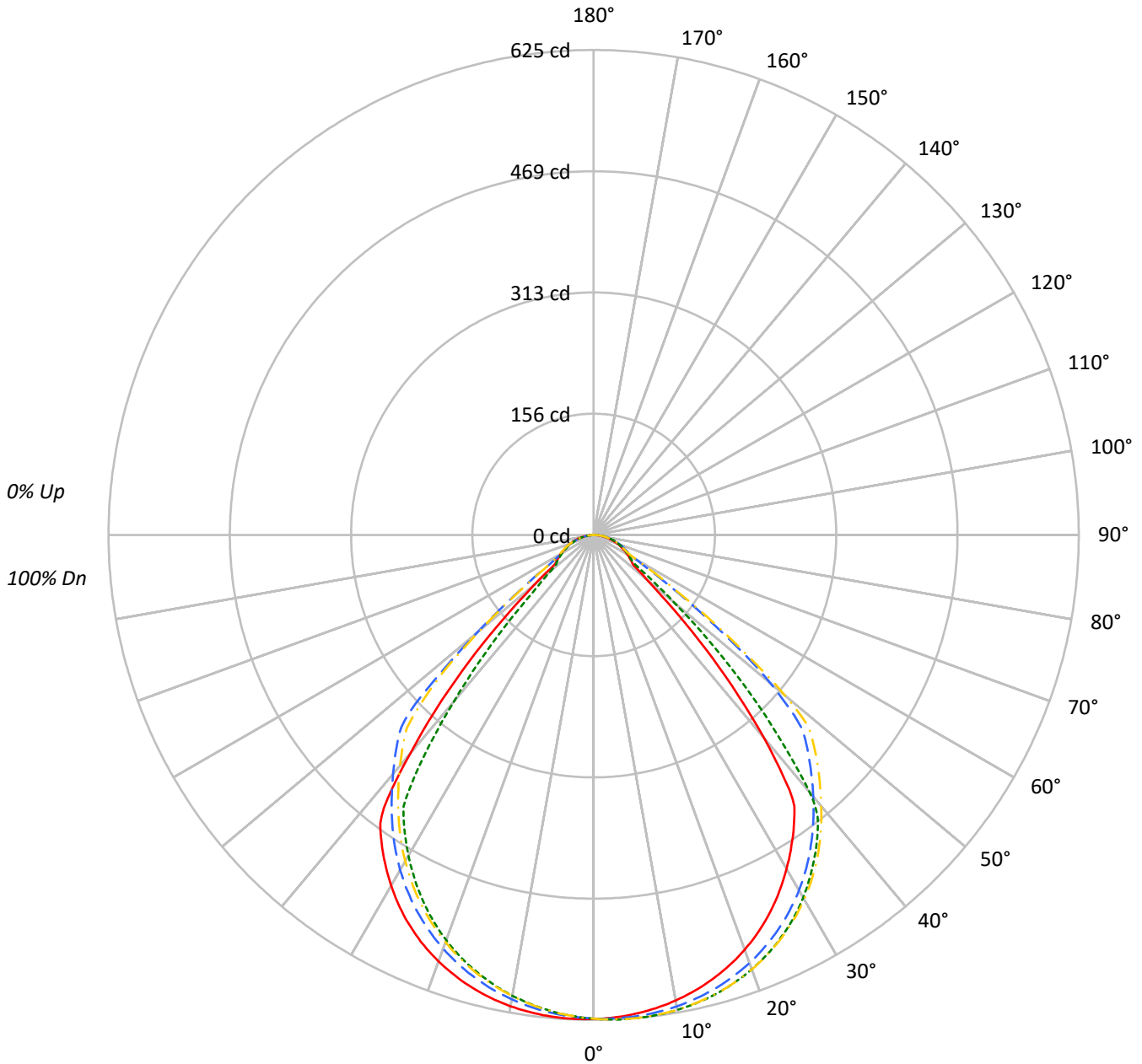
Lumens per Lamp: N/A
Luminaire Lumens: 1129.2 lumens
Efficiency: N/A
Efficacy: 112.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.29
Luminous Opening: Rectangular (W 0.67' x L: 0.67' x H: 0')
CIE Type: Direct

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



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	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	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89					89			
2	104	97	92	88	101	96	91	87	92	88	85	89	86	83	86	84	81	79					79			
3	97	88	82	77	94	87	81	76	84	79	75	81	77	73	79	75	72	70					70			
4	90	80	73	68	88	79	72	67	77	71	66	75	70	66	73	68	65	63					63			
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56					56			
6	78	67	60	54	77	66	59	54	65	58	53	63	57	53	62	57	53	51					51			
7	73	62	54	49	72	61	54	49	60	53	48	58	52	48	57	52	48	46					46			
8	69	57	50	44	67	56	49	44	55	49	44	54	48	44	53	48	44	42					42			
9	65	53	45	41	63	52	45	40	51	45	40	50	44	40	49	44	40	38					38			
10	61	49	42	37	60	49	42	37	48	41	37	47	41	37	46	41	37	35					35			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	14951	14951	14951	14951
5°	14909	15051	15000	14834
10°	14833	15132	15018	14682
15°	14708	15190	14996	14470
20°	14517	15201	14920	14180
25°	14210	15131	14755	13766
30°	13764	14946	14442	13215
35°	13181	14592	13978	12499
40°	10680	13535	11513	8768
45°	6504	9312	7308	4819
50°	3335	5081	3730	2723
55°	2492	2600	2429	2329
60°	2407	2479	2340	2244
65°	2326	2434	2270	2162
70°	2257	2405	2187	2068
75°	2140	2409	2094	1927
80°	1933	2444	1933	1657
85°	1376	2614	1513	963

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 13761 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.0	5.2
10°-20°	168.6	14.9
20°-30°	252.1	22.3
30°-40°	289.3	25.6
40°-50°	210.0	18.6
50°-60°	77.0	6.8
60°-70°	41.3	3.7
70°-80°	25.0	2.2
80°-90°	7.0	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°	479.7	42.5
0°-40°	769.0	68.1
0°-60°	1056.0	93.5
0°-90°	1129.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1129.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	624	624	624	624	624	
5°	619	625	623	616	619	59
15°	592	612	604	583	592	167
25°	537	572	558	520	537	247
35°	450	498	478	427	450	275
45°	192	275	216	142	192	151
55°	60	62	58	56	60	56
65°	41	43	40	38	41	41
75°	23	26	23	21	23	24
85°	5	10	6	4	5	6
90°	0	2	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°	623.5	623.5	623.5	623.5	623.5	623.5	623.5	623.5	623.5	623.5	623.5
0.5°	623.7	623.8	623.5	623.4	623.9	623.9	623.9	624.1	624.1	623.8	622.9
1°	623.5	623.7	623.6	623.7	624.3	624.2	624.2	624.3	624.2	623.7	622.6
1.5°	623.2	623.6	623.7	623.9	624.6	624.5	624.5	624.5	624.2	623.6	622.3
2°	622.8	623.4	623.7	624.0	624.9	624.9	624.8	624.6	624.2	623.5	622.0
2.5°	622.3	623.2	623.7	624.2	625.1	625.1	625.0	624.6	624.2	623.3	621.5
3°	621.9	622.8	623.6	624.3	625.3	625.3	625.1	624.6	624.1	623.0	621.0
3.5°	621.5	622.5	623.5	624.3	625.3	625.4	625.2	624.8	624.0	622.7	620.4
4°	620.8	622.1	623.4	624.3	625.3	625.4	625.3	624.6	623.8	622.3	619.7
4.5°	620.2	621.7	623.0	624.1	625.3	625.4	625.2	624.5	623.5	621.9	619.1
5°	619.4	621.1	622.8	624.0	625.3	625.4	625.2	624.3	623.2	621.3	618.4
5.5°	618.7	620.6	622.4	623.8	625.2	625.2	625.0	624.1	622.7	620.7	617.6
6°	617.8	620.0	622.1	623.6	625.0	625.1	624.8	623.8	622.3	620.2	616.8
6.5°	617.1	619.2	621.6	623.3	624.8	624.9	624.5	623.5	621.8	619.5	615.9
7°	616.1	618.5	621.1	622.9	624.4	624.6	624.2	623.0	621.2	618.8	614.8
7.5°	615.1	617.7	620.5	622.5	624.1	624.4	623.9	622.6	620.6	618.0	613.9
8°	614.0	616.9	620.0	622.1	623.7	624.0	623.5	622.1	620.0	617.2	612.7
8.5°	612.9	615.9	619.2	621.5	623.3	623.6	623.0	621.6	619.2	616.2	611.5
9°	611.8	615.0	618.5	620.9	622.7	623.2	622.5	620.9	618.5	615.3	610.4
9.5°	610.5	613.9	617.7	620.3	622.2	622.5	622.0	620.3	617.6	614.2	609.1
10°	609.2	612.7	617.0	619.6	621.5	622.0	621.2	619.4	616.8	613.1	607.8
10.5°	607.8	611.5	616.0	618.9	620.8	621.3	620.6	618.6	615.7	612.1	606.3
11°	606.4	610.4	615.1	618.0	620.1	620.7	619.9	617.7	614.6	610.8	604.8
11.5°	604.9	609.1	613.9	617.2	619.3	619.9	619.0	616.8	613.6	609.6	603.3
12°	603.3	607.7	612.9	616.2	618.5	619.0	618.1	615.8	612.5	608.2	601.8
12.5°	601.6	606.3	611.8	615.3	617.5	618.1	617.3	614.8	611.2	606.7	600.1
13°	600.0	604.7	610.6	614.2	616.5	617.2	616.2	613.7	609.9	605.3	598.4
13.5°	598.2	603.2	609.3	613.1	615.5	616.2	615.2	612.5	608.6	603.8	596.6
14°	596.4	601.5	608.0	612.0	614.3	615.1	614.1	611.2	607.2	602.2	594.7
14.5°	594.5	599.9	606.6	610.8	613.1	614.0	612.9	609.9	605.7	600.6	592.8
15°	592.5	598.1	605.1	609.4	611.9	612.8	611.6	608.6	604.1	598.8	590.9
15.5°	590.4	596.3	603.7	608.0	610.6	611.4	610.5	607.2	602.5	597.0	588.8
16°	588.3	594.3	602.1	606.6	609.2	610.2	609.1	605.7	600.8	595.1	586.7
16.5°	586.2	592.5	600.4	605.1	607.8	608.8	607.6	604.1	599.1	593.2	584.5
17°	583.9	590.4	598.6	603.5	606.2	607.3	606.1	602.5	597.3	591.3	582.2
17.5°	581.6	588.3	596.9	602.0	604.6	605.8	604.5	600.8	595.3	589.3	579.9
18°	579.3	586.2	595.0	600.2	603.0	604.2	603.0	598.9	593.3	587.1	577.5
18.5°	576.7	583.9	593.1	598.5	601.3	602.5	601.3	597.2	591.3	584.9	575.0
19°	574.1	581.6	591.2	596.6	599.5	600.8	599.5	595.1	589.2	582.7	572.4
19.5°	571.6	579.1	589.1	594.7	597.6	599.0	597.7	593.3	587.0	580.3	569.9
20°	568.9	576.7	586.9	592.8	595.7	597.2	595.8	591.1	584.7	578.0	567.2
20.5°	566.0	574.1	584.8	590.8	593.6	595.1	593.9	589.1	582.3	575.5	564.4
21°	563.2	571.6	582.6	588.6	591.6	593.2	591.7	586.8	580.0	572.9	561.6



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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°	554.0	563.3	575.2	581.8	584.8	586.6	585.2	579.8	572.3	564.8	552.8
23°	550.8	560.3	572.6	579.5	582.5	584.3	583.0	577.3	569.6	561.9	549.7
23.5°	547.5	557.3	570.1	576.9	579.9	581.9	580.5	574.8	566.7	558.9	546.5
24°	544.1	554.1	567.3	574.4	577.4	579.5	578.0	572.0	563.9	555.9	543.3
24.5°	540.7	550.9	564.5	571.8	574.8	576.9	575.5	569.3	560.8	552.8	539.9
25°	537.1	547.6	561.7	568.9	571.9	574.2	572.9	566.6	557.7	549.6	536.6
25.5°	533.4	544.2	558.8	566.1	569.2	571.5	570.2	563.7	554.6	546.3	533.1
26°	529.8	540.8	555.7	563.3	566.3	568.8	567.4	560.7	551.3	543.0	529.6
26.5°	526.0	537.3	552.7	560.3	563.3	565.9	564.5	557.5	547.9	539.5	526.0
27°	522.1	533.6	549.6	557.3	560.2	562.7	561.7	554.3	544.4	536.0	522.2
27.5°	518.0	529.9	546.3	554.2	557.0	559.8	558.7	551.1	540.9	532.4	518.5
28°	514.0	526.2	542.9	550.9	553.7	556.7	555.6	547.8	537.3	528.6	514.8
28.5°	509.7	522.4	539.6	547.7	550.3	553.4	552.4	544.3	533.5	524.8	510.7
29°	505.7	518.4	536.1	544.2	547.1	549.9	549.2	540.9	529.6	521.0	506.8
29.5°	501.3	514.4	532.6	540.8	543.2	546.5	545.9	537.2	525.8	516.8	502.6
30°	497.1	510.2	529.0	537.3	539.8	543.0	542.4	533.5	521.6	512.9	498.6
30.5°	492.5	506.0	525.3	533.6	535.8	539.4	539.0	529.7	517.7	508.7	494.2
31°	488.3	501.9	521.5	529.8	532.3	535.8	535.4	525.9	513.5	504.4	490.0
31.5°	483.7	497.4	517.6	526.1	528.0	531.8	531.7	521.9	509.4	500.2	485.6
32°	479.2	493.0	513.6	522.1	523.9	528.1	527.9	517.9	505.1	495.9	481.1
32.5°	474.4	488.7	509.6	518.1	519.9	524.1	524.1	513.8	500.7	491.6	476.4
33°	469.9	484.3	505.3	514.0	515.9	520.1	520.1	509.7	496.2	487.2	471.8
33.5°	465.1	479.7	501.3	510.0	511.5	516.0	516.1	505.5	491.8	482.8	467.2
34°	460.3	475.3	496.9	505.7	507.1	511.7	511.9	501.1	487.2	478.3	462.4
34.5°	455.1	470.6	492.5	501.5	502.7	507.4	507.8	496.9	482.3	473.8	457.6
35°	450.3	465.9	488.0	497.1	498.5	503.3	503.5	492.5	477.5	469.1	452.7
35.5°	445.3	461.1	483.6	492.7	493.7	498.9	499.0	488.1	472.6	464.3	447.8
36°	440.1	456.3	478.9	488.3	489.1	494.4	494.5	483.6	467.6	459.5	442.8
36.5°	434.7	451.3	474.3	483.9	484.2	490.1	490.0	478.9	462.0	454.6	437.6
37°	425.5	446.3	469.6	479.3	479.3	485.4	485.4	474.1	453.9	449.5	432.6
37.5°	414.5	441.3	464.8	474.6	474.3	480.7	480.6	469.3	443.8	444.5	427.4
38°	399.8	436.0	460.0	469.9	469.2	475.8	475.9	464.3	431.2	439.0	422.3
38.5°	385.1	430.7	455.0	465.1	463.4	471.0	471.0	459.4	416.4	432.9	417.3
39°	370.8	422.7	450.1	460.3	455.2	466.0	466.2	454.3	400.8	423.0	412.2
39.5°	356.3	412.1	445.2	455.3	445.1	460.9	461.2	448.5	384.4	412.1	407.1
40°	341.2	398.1	440.2	450.2	432.4	455.6	456.1	439.1	367.8	399.0	402.0
40.5°	325.4	383.5	435.2	445.0	418.0	450.0	451.0	429.6	352.2	384.4	397.1
41°	309.3	369.5	430.1	439.8	401.7	441.2	446.1	417.2	337.2	369.9	392.1
41.5°	293.5	355.5	425.1	434.1	385.2	431.3	440.9	403.3	321.8	353.6	387.1
42°	278.3	340.8	419.9	426.6	368.6	419.4	435.9	388.3	306.4	338.6	382.0
42.5°	263.9	325.4	414.8	416.8	352.8	405.2	430.9	372.5	290.4	324.2	377.0
43°	249.1	310.2	409.8	405.1	337.5	389.9	425.8	357.2	274.6	310.4	371.9
43.5°	234.4	294.8	404.6	392.0	322.0	373.7	420.9	342.3	258.9	295.3	366.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	191.8	250.4	389.3	347.0	274.6	327.2	405.8	297.8	215.5	251.5	350.3
45.5°	178.3	236.3	384.0	331.9	258.6	312.4	400.6	282.6	201.1	236.2	341.6
46°	165.6	222.2	378.7	317.8	243.8	297.3	395.3	267.5	187.4	222.7	331.4
46.5°	153.1	207.8	373.4	303.6	229.3	281.6	390.1	252.1	173.9	208.7	317.1
47°	141.0	193.8	367.8	289.0	214.8	266.0	384.8	237.6	161.0	196.2	299.5
47.5°	130.0	180.5	358.0	274.3	200.5	250.6	379.2	223.6	148.5	182.4	282.0
48°	119.5	167.6	347.8	259.6	186.4	236.2	373.5	209.9	137.5	170.1	263.9
48.5°	110.1	155.3	335.0	244.8	172.9	222.1	364.6	196.0	126.5	157.5	246.6
49°	102.1	143.1	322.4	231.1	159.9	207.8	352.4	182.4	116.5	145.3	229.8
49.5°	95.3	131.8	309.7	217.0	147.7	193.9	338.9	169.3	107.0	134.4	213.3
50°	89.4	120.9	297.3	204.2	136.2	180.1	322.3	156.6	100.0	124.1	197.0
50.5°	84.5	111.0	283.9	191.0	125.5	166.8	304.8	144.7	93.0	114.0	181.6
51°	79.9	102.3	268.3	177.8	115.3	154.1	286.2	133.0	86.1	104.7	167.2
51.5°	75.3	95.3	252.5	164.6	106.0	141.9	267.6	122.4	79.2	97.4	153.8
52°	70.9	89.1	236.0	152.7	98.7	130.5	249.5	112.5	72.2	90.0	140.8
52.5°	66.9	83.9	219.1	140.9	91.2	119.9	231.7	104.9	66.8	82.8	128.9
53°	64.0	79.1	202.7	130.0	83.9	109.9	215.2	97.2	63.0	75.4	118.2
53.5°	62.7	74.7	186.8	119.3	76.5	102.3	199.6	89.5	61.3	69.6	108.3
54°	61.5	70.2	171.8	110.0	71.0	94.7	184.2	81.8	60.1	64.4	100.8
54.5°	60.5	66.0	157.3	100.6	65.7	87.2	169.2	74.2	59.0	60.5	93.5
55°	59.6	62.5	144.5	92.5	62.2	79.6	154.8	68.7	58.1	58.8	86.2
55.5°	58.5	60.5	132.3	85.0	60.6	72.0	141.3	63.5	57.0	57.6	78.9
56°	57.5	59.4	120.5	78.3	59.6	66.4	128.7	59.5	56.0	56.7	71.6
56.5°	56.6	58.4	109.9	72.1	58.5	61.5	117.9	57.8	55.1	55.6	66.8
57°	55.6	57.3	100.4	66.5	57.4	58.5	108.9	56.6	54.1	54.7	62.8
57.5°	54.7	56.4	91.7	61.5	56.5	57.2	100.0	55.6	53.3	53.7	59.4
58°	53.8	55.4	84.1	58.3	55.5	56.3	90.9	54.6	52.3	52.7	56.6
58.5°	52.9	54.5	77.5	57.0	54.6	55.2	81.9	53.7	51.5	51.9	54.2
59°	52.0	53.5	71.6	55.9	53.6	54.2	73.1	52.7	50.5	50.9	52.2
59.5°	51.0	52.6	66.9	54.9	52.6	53.3	67.1	51.8	49.7	50.1	50.5
60°	50.2	51.7	63.0	53.9	51.7	52.3	62.4	50.9	48.8	49.2	49.0
60.5°	49.2	50.8	59.8	53.0	50.7	51.4	58.8	50.0	48.0	48.4	47.8
61°	48.4	50.0	57.1	52.0	49.9	50.4	55.6	49.1	47.1	47.5	46.9
61.5°	47.4	49.1	54.7	51.1	49.0	49.5	53.3	48.3	46.1	46.7	45.9
62°	46.6	48.2	52.6	50.2	48.2	48.7	51.1	47.4	45.3	45.8	44.9
62.5°	45.6	47.3	50.8	49.3	47.3	47.8	49.4	46.6	44.3	45.0	43.9
63°	44.6	46.5	49.4	48.4	46.4	47.0	47.8	45.7	43.5	44.0	42.9
63.5°	43.8	45.6	48.4	47.5	45.5	46.1	46.7	44.9	42.6	43.2	42.1
64°	42.8	44.8	47.3	46.7	44.6	45.3	45.6	44.0	41.7	42.2	41.1
64.5°	42.0	43.8	46.4	45.7	43.8	44.4	44.6	43.2	40.8	41.3	40.2
65°	41.0	42.9	45.4	44.9	42.9	43.6	43.7	42.3	40.0	40.5	39.2
65.5°	40.1	42.1	44.3	44.0	42.0	42.7	42.7	41.5	39.0	39.5	38.4
66°	39.2	41.1	43.4	43.2	41.1	41.9	41.8	40.5	38.1	38.7	37.4



TEST NUMBER: P775914

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	36.5	38.9	40.6	40.5	38.6	39.3	39.0	37.8	35.6	36.0	34.6
68°	35.7	37.9	39.6	39.5	37.7	38.5	38.0	37.0	34.7	35.1	33.7
68.5°	34.8	37.0	38.5	38.6	36.9	37.5	37.2	36.1	33.9	34.2	32.7
69°	34.0	35.9	37.6	37.7	36.0	36.7	36.2	35.2	33.0	33.2	31.9
69.5°	33.0	35.0	36.8	36.9	35.2	35.8	35.4	34.3	32.2	32.4	30.9
70°	32.2	34.1	35.8	36.1	34.3	35.0	34.4	33.5	31.2	31.5	29.9
70.5°	31.2	33.1	35.0	35.3	33.6	34.1	33.6	32.6	30.4	30.6	29.1
71°	30.4	32.3	34.0	34.3	32.7	33.2	32.6	31.6	29.5	29.7	28.1
71.5°	29.4	31.4	33.1	33.5	31.9	32.4	31.8	30.8	28.7	28.9	27.2
72°	28.6	30.5	32.2	32.6	31.0	31.5	30.8	29.9	27.8	27.9	26.3
72.5°	27.6	29.5	31.2	31.8	30.3	30.7	29.9	29.1	27.0	27.1	25.4
73°	26.7	28.7	30.3	30.8	29.4	29.8	29.0	28.1	26.1	26.2	24.5
73.5°	25.8	27.7	29.4	29.9	28.6	29.0	28.1	27.3	25.3	25.3	23.5
74°	24.9	26.9	28.5	29.1	27.7	28.1	27.3	26.4	24.4	24.4	22.6
74.5°	24.0	25.9	27.5	28.2	26.9	27.3	26.3	25.6	23.4	23.4	21.7
75°	23.1	25.0	26.6	27.4	26.0	26.4	25.5	24.6	22.6	22.6	20.8
75.5°	22.2	24.1	25.7	26.5	25.3	25.6	24.6	23.8	21.7	21.6	19.8
76°	21.2	23.1	24.7	25.6	24.4	24.7	23.7	22.8	20.9	20.7	19.0
76.5°	20.4	22.2	23.9	24.7	23.5	23.9	22.8	22.0	20.0	19.8	18.0
77°	19.4	21.3	22.9	23.9	22.7	23.0	22.0	21.1	19.1	19.0	17.2
77.5°	18.5	20.4	22.0	22.9	21.8	22.2	21.0	20.1	18.2	18.0	16.2
78°	17.6	19.4	21.1	22.1	21.0	21.3	20.1	19.3	17.4	17.2	15.3
78.5°	16.7	18.5	20.1	21.2	20.1	20.5	19.3	18.3	16.5	16.2	14.4
79°	15.8	17.6	19.3	20.2	19.4	19.6	18.3	17.5	15.7	15.3	13.5
79.5°	14.9	16.6	18.3	19.4	18.5	18.8	17.5	16.6	14.8	14.4	12.6
80°	14.0	15.8	17.4	18.5	17.7	17.8	16.6	15.7	14.0	13.5	11.7
80.5°	13.1	14.8	16.5	17.6	16.8	17.0	15.8	14.8	13.1	12.6	10.9
81°	12.3	13.9	15.7	16.7	16.1	16.2	14.9	14.0	12.3	11.7	9.9
81.5°	11.3	12.9	14.7	15.9	15.2	15.2	14.0	13.1	11.4	10.8	9.1
82°	10.4	12.0	13.7	14.9	14.4	14.5	13.1	12.1	10.5	9.9	8.2
82.5°	9.5	11.1	12.9	14.1	13.5	13.5	12.3	11.3	9.7	9.0	7.2
83°	8.6	10.2	12.0	13.2	12.8	12.7	11.4	10.4	8.8	8.1	6.4
83.5°	7.7	9.3	11.1	12.4	11.9	11.8	10.5	9.5	8.0	7.1	5.6
84°	6.8	8.3	10.2	11.5	11.1	11.0	9.7	8.6	7.1	6.3	4.9
84.5°	6.0	7.5	9.3	10.5	10.3	10.1	8.8	7.8	6.3	5.4	4.2
85°	5.0	6.5	8.4	9.7	9.5	9.4	8.0	6.8	5.5	4.5	3.4
85.5°	4.2	5.6	7.6	8.8	8.6	8.5	7.1	6.0	4.7	3.6	2.7
86°	3.5	4.7	6.6	8.0	7.9	7.7	6.3	5.1	3.9	2.9	2.0
86.5°	2.8	3.7	5.9	7.2	7.0	6.8	5.5	4.2	3.1	2.2	1.3
87°	2.1	3.1	5.1	6.4	6.2	6.0	4.8	3.4	2.3	1.7	0.6
87.5°	1.5	2.5	4.4	5.5	5.4	5.2	4.0	2.8	1.8	1.2	0.1
88°	0.9	1.8	3.7	4.8	4.6	4.4	3.4	2.1	1.3	0.6	0.0
88.5°	0.3	1.2	3.0	3.9	3.8	3.6	2.7	1.6	0.7	0.1	0.0



TEST NUMBER: P775914

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.9	1.6	1.5	1.3	0.6	0.1	0.0	0.0	0.0



TEST NUMBER: P775914

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	623.5	623.5	623.5	623.5	623.5	623.5
0.5°	622.6	623.0	622.9	623.0	623.4	623.7
1°	622.2	622.5	622.3	622.5	622.9	623.5
1.5°	621.7	622.0	621.7	621.9	622.5	623.2
2°	621.1	621.3	621.0	621.3	622.0	622.8
2.5°	620.5	620.6	620.4	620.6	621.3	622.3
3°	619.9	620.0	619.5	620.0	620.7	621.9
3.5°	619.1	619.1	618.8	619.1	620.1	621.5
4°	618.4	618.3	617.8	618.3	619.3	620.8
4.5°	617.5	617.3	617.0	617.4	618.6	620.2
5°	616.7	616.3	615.9	616.3	617.6	619.4
5.5°	615.7	615.3	614.8	615.4	616.8	618.7
6°	614.6	614.2	613.7	614.3	615.8	617.8
6.5°	613.6	613.0	612.5	613.1	614.8	617.1
7°	612.4	611.8	611.2	612.0	613.7	616.1
7.5°	611.2	610.5	609.8	610.7	612.6	615.1
8°	609.9	609.1	608.5	609.4	611.3	614.0
8.5°	608.6	607.7	607.1	608.0	610.0	612.9
9°	607.2	606.1	605.6	606.5	608.8	611.8
9.5°	605.7	604.6	604.0	605.0	607.4	610.5
10°	604.2	603.0	602.3	603.4	605.9	609.2
10.5°	602.5	601.3	600.6	601.8	604.4	607.8
11°	600.9	599.5	598.9	600.1	602.8	606.4
11.5°	599.1	597.7	597.0	598.4	601.2	604.9
12°	597.4	595.8	595.0	596.5	599.4	603.3
12.5°	595.5	593.7	593.1	594.7	597.6	601.6
13°	593.5	591.7	591.0	592.7	595.9	600.0
13.5°	591.5	589.6	589.0	590.8	594.0	598.2
14°	589.5	587.5	586.7	588.6	591.9	596.4
14.5°	587.4	585.2	584.5	586.5	589.9	594.5
15°	585.1	582.9	582.0	584.3	587.8	592.5
15.5°	582.9	580.5	579.8	582.0	585.5	590.4
16°	580.5	578.0	577.3	579.6	583.4	588.3
16.5°	578.2	575.5	574.8	577.2	581.1	586.2
17°	575.6	573.0	572.1	574.7	578.7	583.9
17.5°	573.1	570.2	569.4	572.2	576.3	581.6
18°	570.5	567.4	566.8	569.6	573.7	579.3
18.5°	567.7	564.5	564.0	566.8	571.2	576.7
19°	565.0	561.7	560.9	564.1	568.5	574.1
19.5°	562.2	558.8	558.0	561.2	565.8	571.6
20°	559.3	555.7	555.1	558.4	562.9	568.9
20.5°	556.2	552.5	552.0	555.5	560.1	566.0
21°	553.3	549.3	548.8	552.3	557.1	563.2



TEST NUMBER: P775914

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	543.6	539.1	538.8	542.8	547.7	554.0
23°	540.3	535.5	535.2	539.5	544.5	550.8
23.5°	536.7	531.9	531.7	536.2	541.2	547.5
24°	533.2	528.1	528.1	532.7	537.8	544.1
24.5°	529.6	524.3	524.3	529.2	534.3	540.7
25°	525.9	520.3	520.4	525.5	530.8	537.1
25.5°	522.1	516.4	516.6	521.9	527.0	533.4
26°	518.2	512.3	512.7	518.1	523.4	529.8
26.5°	514.3	508.3	508.6	514.3	519.6	526.0
27°	510.3	504.0	504.4	510.4	515.7	522.1
27.5°	506.2	499.7	500.3	506.5	511.7	518.0
28°	502.0	495.3	495.9	502.3	507.6	514.0
28.5°	497.7	490.8	491.7	498.3	503.6	509.7
29°	493.5	486.3	487.3	494.0	499.5	505.7
29.5°	489.1	481.9	482.8	489.7	495.2	501.3
30°	484.6	477.3	478.2	485.5	490.9	497.1
30.5°	480.2	472.6	473.8	481.0	486.5	492.5
31°	475.7	467.9	469.2	476.6	482.1	488.3
31.5°	471.1	463.1	464.4	472.1	477.6	483.7
32°	466.5	458.2	459.7	467.5	473.0	479.2
32.5°	461.9	453.3	455.1	462.7	468.4	474.4
33°	457.1	448.3	450.3	458.1	463.9	469.9
33.5°	452.3	443.2	445.3	453.3	459.1	465.1
34°	447.4	438.1	440.5	448.5	454.6	460.3
34.5°	442.6	432.6	435.4	443.4	449.8	455.1
35°	437.6	427.0	430.4	438.6	445.0	450.3
35.5°	432.6	415.7	425.2	433.7	440.2	445.3
36°	427.5	402.8	420.1	428.6	435.3	440.1
36.5°	422.3	388.3	414.4	423.6	430.2	434.7
37°	416.8	373.8	406.5	418.6	425.2	425.5
37.5°	410.3	358.9	395.3	413.4	420.1	414.5
38°	399.3	343.5	381.6	408.3	414.8	399.8
38.5°	386.1	327.8	367.4	403.2	409.7	385.1
39°	372.1	311.6	354.1	398.2	404.2	370.8
39.5°	358.0	295.3	339.7	393.1	395.4	356.3
40°	344.0	280.1	325.0	388.1	384.9	341.2
40.5°	329.2	265.1	309.6	382.9	371.3	325.4
41°	313.9	250.6	294.5	377.8	357.6	309.3
41.5°	298.4	235.7	279.5	372.6	344.4	293.5
42°	283.2	221.4	264.9	367.6	330.8	278.3
42.5°	268.3	206.7	250.9	362.5	317.1	263.9
43°	253.8	192.8	237.5	357.4	302.7	249.1
43.5°	239.9	179.3	223.6	352.1	288.1	234.4



TEST NUMBER: P775914

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	198.1	142.1	182.6	326.8	245.8	191.8
45.5°	184.7	130.5	170.0	314.9	232.6	178.3
46°	171.7	120.0	157.9	302.6	219.2	165.6
46.5°	159.2	110.6	146.0	291.0	205.8	153.1
47°	147.2	102.8	134.4	279.0	192.3	141.0
47.5°	135.6	96.2	123.7	266.6	179.6	130.0
48°	124.4	90.8	113.8	251.7	167.2	119.5
48.5°	114.4	86.0	105.3	236.2	155.3	110.1
49°	105.3	81.6	98.0	219.9	143.5	102.1
49.5°	99.4	77.3	91.7	204.6	132.7	95.3
50°	93.8	73.0	86.5	190.0	121.8	89.4
50.5°	88.1	68.6	81.9	176.2	112.0	84.5
51°	82.4	65.2	77.7	162.7	103.0	79.9
51.5°	76.7	63.0	73.4	150.6	95.5	75.3
52°	72.4	61.7	69.2	138.8	88.9	70.9
52.5°	68.2	60.6	65.1	127.3	83.2	66.9
53°	64.0	59.7	62.0	117.0	78.3	64.0
53.5°	60.7	58.7	60.5	107.6	73.8	62.7
54°	58.9	57.6	59.4	98.7	69.4	61.5
54.5°	57.9	56.7	58.4	91.3	65.2	60.5
55°	56.8	55.7	57.3	84.2	61.7	59.6
55.5°	55.8	54.8	56.4	78.0	59.6	58.5
56°	54.9	53.9	55.4	72.4	58.5	57.5
56.5°	53.9	53.0	54.5	68.0	57.4	56.6
57°	53.1	52.1	53.5	64.0	56.5	55.6
57.5°	52.1	51.1	52.6	60.8	55.5	54.7
58°	51.3	50.3	51.8	58.1	54.6	53.8
58.5°	50.4	49.4	50.8	55.8	53.6	52.9
59°	49.4	48.6	50.0	53.7	52.7	52.0
59.5°	48.6	47.7	49.1	51.9	51.8	51.0
60°	47.7	46.8	48.2	50.5	50.8	50.2
60.5°	46.9	45.9	47.4	49.4	50.0	49.2
61°	46.0	45.1	46.6	48.5	49.0	48.4
61.5°	45.1	44.2	45.7	47.5	48.2	47.4
62°	44.2	43.3	44.8	46.5	47.2	46.6
62.5°	43.4	42.4	43.9	45.5	46.4	45.6
63°	42.4	41.6	43.0	44.5	45.4	44.6
63.5°	41.6	40.6	42.1	43.6	44.4	43.8
64°	40.7	39.7	41.2	42.6	43.5	42.8
64.5°	39.7	39.0	40.3	41.7	42.5	42.0
65°	38.9	38.1	39.4	40.7	41.7	41.0
65.5°	37.9	37.3	38.4	39.9	40.7	40.1
66°	37.1	36.4	37.6	38.9	39.7	39.2



TEST NUMBER: P775914

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	34.4	33.8	35.2	36.0	37.0	36.5
68°	33.6	32.9	34.2	35.2	36.0	35.7
68.5°	32.6	32.1	33.4	34.2	35.1	34.8
69°	31.8	31.2	32.5	33.2	34.2	34.0
69.5°	30.8	30.4	31.5	32.3	33.2	33.0
70°	29.9	29.5	30.7	31.3	32.3	32.2
70.5°	29.1	28.7	29.7	30.4	31.3	31.2
71°	28.2	27.8	28.9	29.4	30.5	30.4
71.5°	27.3	27.0	28.0	28.5	29.5	29.4
72°	26.4	26.0	27.1	27.5	28.6	28.6
72.5°	25.5	25.1	26.1	26.5	27.6	27.6
73°	24.6	24.3	25.3	25.7	26.6	26.7
73.5°	23.7	23.3	24.3	24.7	25.7	25.8
74°	22.8	22.5	23.4	23.8	24.8	24.9
74.5°	21.8	21.6	22.5	22.8	23.9	24.0
75°	21.0	20.8	21.5	21.8	22.9	23.1
75.5°	20.0	19.8	20.7	20.9	21.8	22.2
76°	19.2	19.0	19.7	19.9	21.0	21.2
76.5°	18.2	18.1	18.9	19.0	20.0	20.4
77°	17.4	17.3	17.9	18.1	19.1	19.4
77.5°	16.4	16.4	17.0	17.2	18.1	18.5
78°	15.6	15.6	16.1	16.2	17.2	17.6
78.5°	14.6	14.6	15.2	15.2	16.2	16.7
79°	13.7	13.7	14.3	14.3	15.2	15.8
79.5°	12.8	12.9	13.3	13.3	14.3	14.9
80°	11.9	12.0	12.5	12.5	13.3	14.0
80.5°	11.0	11.2	11.5	11.5	12.4	13.1
81°	10.1	10.3	10.7	10.5	11.4	12.3
81.5°	9.3	9.5	9.8	9.7	10.4	11.3
82°	8.4	8.6	8.8	8.8	9.5	10.4
82.5°	7.6	7.7	8.0	8.0	8.6	9.5
83°	6.6	6.8	7.1	7.1	7.7	8.6
83.5°	5.8	6.0	6.2	6.3	6.6	7.7
84°	4.9	5.1	5.3	5.5	5.8	6.8
84.5°	4.2	4.4	4.5	4.7	4.8	6.0
85°	3.3	3.5	3.6	3.9	4.0	5.0
85.5°	2.5	2.7	2.9	3.2	3.4	4.2
86°	1.6	1.9	2.0	2.5	2.8	3.5
86.5°	0.9	1.1	1.2	1.7	2.0	2.8
87°	0.2	0.3	0.4	0.9	1.4	2.1
87.5°	0.0	0.0	0.1	0.3	0.9	1.5
88°	0.0	0.0	0.0	0.0	0.3	0.9
88.5°	0.0	0.0	0.0	0.0	0.0	0.3



TEST NUMBER: P775914

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQMW-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°	560.2	568.9	580.1	586.5	589.4	591.1	589.7	584.6	577.5	570.2	558.8
22°	557.1	566.1	577.8	584.2	587.1	589.0	587.6	582.2	575.0	567.4	555.8



44°	219.9	279.6	399.4	377.2	306.2	357.7	415.9	327.8	243.9	280.6	361.4
44.5°	205.7	264.8	394.2	362.1	290.5	342.1	410.9	312.6	229.3	265.1	356.2



66.5°	38.4	40.3	42.4	42.2	40.3	41.0	40.8	39.6	37.3	37.7	36.4
67°	37.5	39.3	41.5	41.3	39.4	40.2	40.0	38.8	36.4	36.9	35.6



89°	0.0	0.6	2.2	3.2	3.0	2.8	2.0	1.0	0.3	0.0	0.0
89.5°	0.0	0.1	1.6	2.3	2.2	2.0	1.3	0.4	0.0	0.0	0.0

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21.5°	550.1	545.9	545.6	549.2	554.1	560.2
22°	546.9	542.5	542.1	546.1	551.0	557.1



44°	226.1	166.7	209.6	346.4	273.7	219.9
44.5°	212.2	153.9	195.7	336.9	259.6	205.7

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66.5°	36.2	35.6	36.8	37.9	38.8	38.4
67°	35.4	34.7	35.9	37.0	37.8	37.5

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89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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(END OF REPORT)