

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: P775858

Luminaire Tested: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775858
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B065-HCD82TRMB)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD82TRMB-1000lm-4000K
Description: 8 INCH ROUND NARROW MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 693.9 lumens
Efficiency: N/A
Efficacy: 69.4 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.06 / 1.08
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

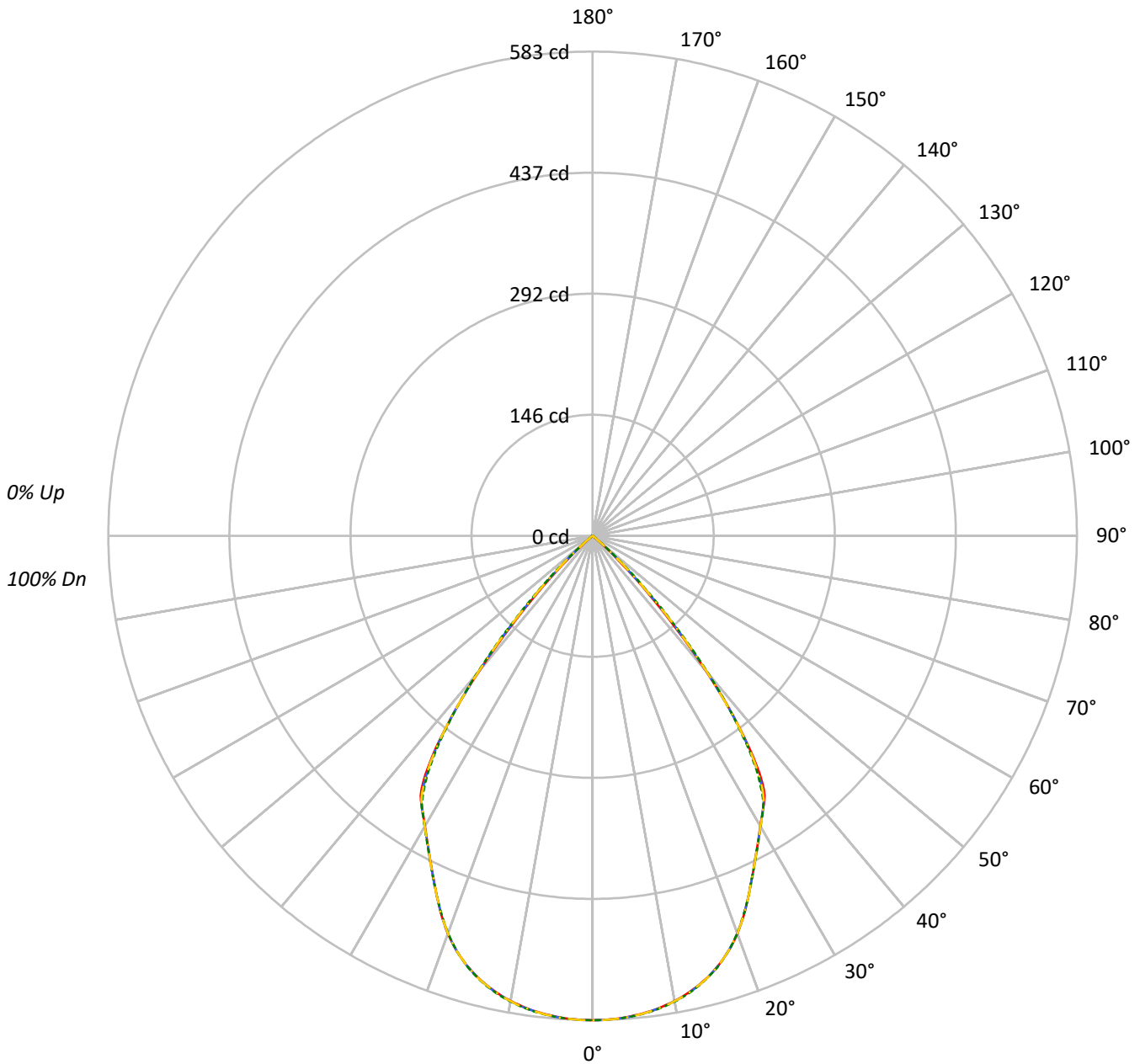
Input Watts (W): 10
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

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	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	113	110	108	105	111	108	106	104	104	102	101	100	99	98	97	96	95	93						93													
2	107	102	98	94	105	100	97	93	97	94	91	94	92	89	91	89	87	86						86													
3	101	95	89	85	99	93	88	85	91	86	83	88	85	82	86	83	81	79						79													
4	96	88	82	77	94	87	81	77	84	80	76	82	78	75	81	77	74	73						73													
5	90	82	75	71	89	81	75	70	79	74	70	77	73	69	75	72	69	67						67													
6	85	76	70	65	84	75	69	65	74	68	64	72	67	64	71	67	63	62						62													
7	81	71	64	60	79	70	64	60	69	63	59	68	63	59	66	62	59	57						57													
8	76	66	60	55	75	66	60	55	64	59	55	63	58	55	62	58	55	53						53													
9	72	62	56	51	71	61	55	51	60	55	51	60	55	51	59	54	51	49						49													
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47	46						46													

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17811	17811	17811	17811
5°	17769	17787	17769	17787
10°	17630	17655	17630	17655
15°	17289	17308	17289	17308
20°	16557	16540	16557	16540
25°	15294	15307	15294	15307
30°	14239	14260	14239	14260
35°	13071	12802	13071	12802
40°	8433	8668	8433	8668
45°	3096	3722	3096	3722
50°	356	570	356	570
55°	59	59	59	59
60°	31	31	31	31
65°	22	22	22	22
70°	18	18	18	18
75°	12	12	12	12
80°	0	0	0	0
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 3722 cd/sqm



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.0	7.9
10°-20°	153.5	22.1
20°-30°	209.2	30.1
30°-40°	206.6	29.8
40°-50°	67.6	9.7
50°-60°	1.6	0.2
60°-70°	0.3	0.0
70°-80°	0.1	0.0
80°-90°	0.0	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°	417.7	60.2
0°-40°	624.2	90.0
0°-60°	693.5	99.9
0°-90°	693.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	693.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	583	583	583	583	583	
5°	580	580	580	580	580	55
15°	547	548	547	548	547	153
25°	454	454	454	454	454	209
35°	351	344	351	344	351	207
45°	72	86	72	86	72	63
55°	1	1	1	1	1	1
65°	0	0	0	0	0	0
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°	583.4	583.4	583.4	583.4	583.4	583.4	583.4	583.4	583.4	583.4	583.4
0.5°	583.3	583.3	583.4	583.3	583.4	583.3	583.4	583.3	583.3	583.3	583.4
1°	583.2	583.2	583.3	583.2	583.4	583.2	583.3	583.2	583.2	583.2	583.3
1.5°	583.0	583.1	583.1	583.1	583.2	583.1	583.1	583.1	583.0	583.1	583.1
2°	582.8	582.8	582.9	582.9	583.0	582.9	582.9	582.8	582.8	582.8	582.9
2.5°	582.5	582.6	582.6	582.6	582.7	582.6	582.6	582.6	582.5	582.6	582.6
3°	582.1	582.1	582.3	582.3	582.4	582.3	582.3	582.1	582.1	582.1	582.3
3.5°	581.7	581.7	581.8	581.8	581.9	581.8	581.8	581.7	581.7	581.7	581.8
4°	581.2	581.2	581.3	581.3	581.5	581.3	581.3	581.2	581.2	581.2	581.3
4.5°	580.6	580.6	580.7	580.8	580.9	580.8	580.7	580.6	580.6	580.6	580.7
5°	579.8	579.9	580.0	580.1	580.4	580.1	580.0	579.9	579.8	579.9	580.0
5.5°	579.2	579.2	579.3	579.4	579.6	579.4	579.3	579.2	579.2	579.2	579.3
6°	578.4	578.4	578.6	578.7	578.9	578.7	578.6	578.4	578.4	578.4	578.6
6.5°	577.4	577.5	577.7	577.8	578.0	577.8	577.7	577.5	577.4	577.5	577.7
7°	576.5	576.5	576.8	576.9	577.1	576.9	576.8	576.5	576.5	576.5	576.8
7.5°	575.4	575.4	575.7	575.8	576.1	575.8	575.7	575.4	575.4	575.4	575.7
8°	574.3	574.4	574.6	574.8	575.0	574.8	574.6	574.4	574.3	574.4	574.6
8.5°	573.0	573.1	573.3	573.5	573.7	573.5	573.3	573.1	573.0	573.1	573.3
9°	571.6	571.7	572.1	572.3	572.5	572.3	572.1	571.7	571.6	571.7	572.1
9.5°	570.2	570.3	570.6	570.9	571.1	570.9	570.6	570.3	570.2	570.3	570.6
10°	568.7	568.8	569.0	569.3	569.5	569.3	569.0	568.8	568.7	568.8	569.0
10.5°	567.0	567.1	567.4	567.7	568.0	567.7	567.4	567.1	567.0	567.1	567.4
11°	565.3	565.4	565.7	566.0	566.2	566.0	565.7	565.4	565.3	565.4	565.7
11.5°	563.4	563.5	563.9	564.1	564.4	564.1	563.9	563.5	563.4	563.5	563.9
12°	561.5	561.5	561.9	562.2	562.4	562.2	561.9	561.5	561.5	561.5	561.9
12.5°	559.4	559.4	559.8	560.1	560.3	560.1	559.8	559.4	559.4	559.4	559.8
13°	557.2	557.3	557.5	557.9	558.0	557.9	557.5	557.3	557.2	557.3	557.5
13.5°	554.8	554.9	555.2	555.4	555.7	555.4	555.2	554.9	554.8	554.9	555.2
14°	552.4	552.5	552.7	552.9	553.1	552.9	552.7	552.5	552.4	552.5	552.7
14.5°	549.8	549.9	550.1	550.3	550.5	550.3	550.1	549.9	549.8	549.9	550.1
15°	547.0	547.0	547.2	547.5	547.6	547.5	547.2	547.0	547.0	547.0	547.2
15.5°	544.1	544.1	544.3	544.5	544.6	544.5	544.3	544.1	544.1	544.1	544.3
16°	540.9	541.0	541.2	541.3	541.5	541.3	541.2	541.0	540.9	541.0	541.2
16.5°	537.8	537.8	537.9	538.0	538.1	538.0	537.9	537.8	537.8	537.8	537.9
17°	534.3	534.3	534.4	534.5	534.6	534.5	534.4	534.3	534.3	534.3	534.4
17.5°	530.6	530.6	530.7	530.7	530.8	530.7	530.7	530.6	530.6	530.6	530.7
18°	527.0	526.9	526.9	526.9	527.0	526.9	526.9	526.9	527.0	526.9	526.9
18.5°	522.9	522.9	522.8	522.8	522.8	522.8	522.8	522.9	522.9	522.9	522.8
19°	518.7	518.7	518.6	518.4	518.4	518.4	518.6	518.7	518.7	518.7	518.6
19.5°	514.2	514.1	514.0	513.9	513.9	513.9	514.0	514.1	514.2	514.1	514.0
20°	509.6	509.5	509.4	509.2	509.1	509.2	509.4	509.5	509.6	509.5	509.4
20.5°	504.7	504.6	504.4	504.1	504.0	504.1	504.4	504.6	504.7	504.6	504.4
21°	499.5	499.5	499.3	498.9	498.7	498.9	499.3	499.5	499.5	499.5	499.3



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	483.0	483.0	482.8	482.5	482.5	482.5	482.8	483.0	483.0	483.0	482.8
23°	477.2	477.2	477.1	476.8	476.8	476.8	477.1	477.2	477.2	477.2	477.1
23.5°	471.4	471.5	471.4	471.1	471.1	471.1	471.4	471.5	471.4	471.5	471.4
24°	465.5	465.6	465.6	465.5	465.6	465.5	465.6	465.6	465.5	465.6	465.6
24.5°	459.8	459.8	459.9	459.8	460.0	459.8	459.9	459.8	459.8	459.8	459.9
25°	454.0	454.1	454.2	454.2	454.4	454.2	454.2	454.1	454.0	454.1	454.2
25.5°	448.5	448.5	448.6	448.8	449.0	448.8	448.6	448.5	448.5	448.5	448.6
26°	443.1	443.2	443.3	443.4	443.6	443.4	443.3	443.2	443.1	443.2	443.3
26.5°	437.7	437.8	437.9	438.0	438.3	438.0	437.9	437.8	437.7	437.8	437.9
27°	432.6	432.6	432.8	432.8	433.1	432.8	432.8	432.6	432.6	432.6	432.8
27.5°	427.4	427.5	427.6	427.8	428.0	427.8	427.6	427.5	427.4	427.5	427.6
28°	422.4	422.5	422.7	422.8	423.1	422.8	422.7	422.5	422.4	422.5	422.7
28.5°	417.5	417.7	417.8	418.0	418.3	418.0	417.8	417.7	417.5	417.7	417.8
29°	412.9	413.0	413.1	413.2	413.5	413.2	413.1	413.0	412.9	413.0	413.1
29.5°	408.3	408.4	408.6	408.7	408.9	408.7	408.6	408.4	408.3	408.4	408.6
30°	403.9	403.9	404.1	404.2	404.5	404.2	404.1	403.9	403.9	403.9	404.1
30.5°	399.5	399.6	399.7	399.9	400.1	399.9	399.7	399.6	399.5	399.6	399.7
31°	395.2	395.4	395.6	395.7	396.0	395.7	395.6	395.4	395.2	395.4	395.6
31.5°	391.3	391.4	391.4	391.5	391.7	391.5	391.4	391.4	391.3	391.4	391.4
32°	387.4	387.4	387.4	387.3	387.5	387.3	387.4	387.4	387.4	387.4	387.4
32.5°	383.6	383.5	383.3	382.8	382.4	382.8	383.3	383.5	383.6	383.5	383.3
33°	379.5	379.3	378.2	377.2	376.0	377.2	378.2	379.3	379.5	379.3	378.2
33.5°	375.1	374.0	372.0	370.2	368.8	370.2	372.0	374.0	375.1	374.0	372.0
34°	368.8	367.4	364.7	362.3	360.8	362.3	364.7	367.4	368.8	367.4	364.7
34.5°	360.5	359.3	356.2	354.0	352.5	354.0	356.2	359.3	360.5	359.3	356.2
35°	350.7	349.5	346.8	345.0	343.5	345.0	346.8	349.5	350.7	349.5	346.8
35.5°	340.0	339.3	336.8	334.9	333.4	334.9	336.8	339.3	340.0	339.3	336.8
36°	328.5	328.0	325.9	324.0	322.4	324.0	325.9	328.0	328.5	328.0	325.9
36.5°	316.3	315.9	314.1	312.1	310.4	312.1	314.1	315.9	316.3	315.9	314.1
37°	302.6	302.3	301.3	299.8	298.1	299.8	301.3	302.3	302.6	302.3	301.3
37.5°	288.6	288.1	287.7	286.8	285.4	286.8	287.7	288.1	288.6	288.1	287.7
38°	273.6	273.0	273.2	273.1	272.5	273.1	273.2	273.0	273.6	273.0	273.2
38.5°	259.1	258.2	258.4	258.9	259.4	258.9	258.4	258.2	259.1	258.2	258.4
39°	243.5	243.1	243.3	244.6	246.0	244.6	243.3	243.1	243.5	243.1	243.3
39.5°	227.9	228.1	228.5	230.1	232.0	230.1	228.5	228.1	227.9	228.1	228.5
40°	211.6	212.7	213.6	215.7	217.5	215.7	213.6	212.7	211.6	212.7	213.6
40.5°	195.9	197.4	199.2	201.5	203.1	201.5	199.2	197.4	195.9	197.4	199.2
41°	179.9	181.9	184.8	187.4	189.0	187.4	184.8	181.9	179.9	181.9	184.8
41.5°	164.6	166.7	170.3	173.4	174.9	173.4	170.3	166.7	164.6	166.7	170.3
42°	149.7	151.6	155.8	159.6	160.9	159.6	155.8	151.6	149.7	151.6	155.8
42.5°	135.2	137.5	142.2	146.0	147.3	146.0	142.2	137.5	135.2	137.5	142.2
43°	121.2	123.8	128.6	132.6	133.9	132.6	128.6	123.8	121.2	123.8	128.6
43.5°	108.2	110.7	115.3	119.4	121.3	119.4	115.3	110.7	108.2	110.7	115.3



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	71.7	73.9	78.7	83.6	86.2	83.6	78.7	73.9	71.7	73.9	78.7
45.5°	60.7	63.3	68.2	73.3	75.7	73.3	68.2	63.3	60.7	63.3	68.2
46°	51.0	53.2	58.8	63.7	66.6	63.7	58.8	53.2	51.0	53.2	58.8
46.5°	42.3	44.6	49.8	54.6	57.7	54.6	49.8	44.6	42.3	44.6	49.8
47°	35.4	36.8	41.2	45.9	48.7	45.9	41.2	36.8	35.4	36.8	41.2
47.5°	28.9	29.7	33.7	37.8	39.6	37.8	33.7	29.7	28.9	29.7	33.7
48°	23.0	23.9	26.9	30.6	32.5	30.6	26.9	23.9	23.0	23.9	26.9
48.5°	18.5	18.9	21.5	24.3	26.0	24.3	21.5	18.9	18.5	18.9	21.5
49°	13.9	14.4	16.6	19.2	20.2	19.2	16.6	14.4	13.9	14.4	16.6
49.5°	10.5	10.7	12.2	14.5	15.8	14.5	12.2	10.7	10.5	10.7	12.2
50°	7.5	7.3	9.3	11.4	12.0	11.4	9.3	7.3	7.5	7.3	9.3
50.5°	4.6	5.0	6.5	8.5	9.7	8.5	6.5	5.0	4.6	5.0	6.5
51°	2.5	3.4	4.5	5.7	7.4	5.7	4.5	3.4	2.5	3.4	4.5
51.5°	2.0	2.1	2.9	3.7	5.5	3.7	2.9	2.1	2.0	2.1	2.9
52°	1.7	1.8	1.9	2.3	3.6	2.3	1.9	1.8	1.7	1.8	1.9
52.5°	1.4	1.6	1.6	1.8	1.7	1.8	1.6	1.6	1.4	1.6	1.6
53°	1.4	1.4	1.5	1.5	1.4	1.5	1.5	1.4	1.4	1.4	1.5
53.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
54°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
54.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
55°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
55.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
56°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
56.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
57°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
57.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
58°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
58.5°	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7
59°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
59.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
60°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
60.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
61°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
61.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
62°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
62.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
63°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
63.5°	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4
64°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
64.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
65°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
65.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
66°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
68°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
68.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
69°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
69.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
70°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
70.5°	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2
71°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
71.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
72°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
72.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
73°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
73.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
74°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
74.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
75°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
75.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
76°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
76.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
77°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
77.5°	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
78°	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	583.4	583.4	583.4	583.4	583.4	583.4
0.5°	583.3	583.4	583.3	583.4	583.3	583.3
1°	583.2	583.4	583.2	583.3	583.2	583.2
1.5°	583.1	583.2	583.1	583.1	583.1	583.0
2°	582.9	583.0	582.9	582.9	582.8	582.8
2.5°	582.6	582.7	582.6	582.6	582.6	582.5
3°	582.3	582.4	582.3	582.3	582.1	582.1
3.5°	581.8	581.9	581.8	581.8	581.7	581.7
4°	581.3	581.5	581.3	581.3	581.2	581.2
4.5°	580.8	580.9	580.8	580.7	580.6	580.6
5°	580.1	580.4	580.1	580.0	579.9	579.8
5.5°	579.4	579.6	579.4	579.3	579.2	579.2
6°	578.7	578.9	578.7	578.6	578.4	578.4
6.5°	577.8	578.0	577.8	577.7	577.5	577.4
7°	576.9	577.1	576.9	576.8	576.5	576.5
7.5°	575.8	576.1	575.8	575.7	575.4	575.4
8°	574.8	575.0	574.8	574.6	574.4	574.3
8.5°	573.5	573.7	573.5	573.3	573.1	573.0
9°	572.3	572.5	572.3	572.1	571.7	571.6
9.5°	570.9	571.1	570.9	570.6	570.3	570.2
10°	569.3	569.5	569.3	569.0	568.8	568.7
10.5°	567.7	568.0	567.7	567.4	567.1	567.0
11°	566.0	566.2	566.0	565.7	565.4	565.3
11.5°	564.1	564.4	564.1	563.9	563.5	563.4
12°	562.2	562.4	562.2	561.9	561.5	561.5
12.5°	560.1	560.3	560.1	559.8	559.4	559.4
13°	557.9	558.0	557.9	557.5	557.3	557.2
13.5°	555.4	555.7	555.4	555.2	554.9	554.8
14°	552.9	553.1	552.9	552.7	552.5	552.4
14.5°	550.3	550.5	550.3	550.1	549.9	549.8
15°	547.5	547.6	547.5	547.2	547.0	547.0
15.5°	544.5	544.6	544.5	544.3	544.1	544.1
16°	541.3	541.5	541.3	541.2	541.0	540.9
16.5°	538.0	538.1	538.0	537.9	537.8	537.8
17°	534.5	534.6	534.5	534.4	534.3	534.3
17.5°	530.7	530.8	530.7	530.7	530.6	530.6
18°	526.9	527.0	526.9	526.9	526.9	527.0
18.5°	522.8	522.8	522.8	522.8	522.9	522.9
19°	518.4	518.4	518.4	518.6	518.7	518.7
19.5°	513.9	513.9	513.9	514.0	514.1	514.2
20°	509.2	509.1	509.2	509.4	509.5	509.6
20.5°	504.1	504.0	504.1	504.4	504.6	504.7
21°	498.9	498.7	498.9	499.3	499.5	499.5



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	482.5	482.5	482.5	482.8	483.0	483.0
23°	476.8	476.8	476.8	477.1	477.2	477.2
23.5°	471.1	471.1	471.1	471.4	471.5	471.4
24°	465.5	465.6	465.5	465.6	465.6	465.5
24.5°	459.8	460.0	459.8	459.9	459.8	459.8
25°	454.2	454.4	454.2	454.2	454.1	454.0
25.5°	448.8	449.0	448.8	448.6	448.5	448.5
26°	443.4	443.6	443.4	443.3	443.2	443.1
26.5°	438.0	438.3	438.0	437.9	437.8	437.7
27°	432.8	433.1	432.8	432.8	432.6	432.6
27.5°	427.8	428.0	427.8	427.6	427.5	427.4
28°	422.8	423.1	422.8	422.7	422.5	422.4
28.5°	418.0	418.3	418.0	417.8	417.7	417.5
29°	413.2	413.5	413.2	413.1	413.0	412.9
29.5°	408.7	408.9	408.7	408.6	408.4	408.3
30°	404.2	404.5	404.2	404.1	403.9	403.9
30.5°	399.9	400.1	399.9	399.7	399.6	399.5
31°	395.7	396.0	395.7	395.6	395.4	395.2
31.5°	391.5	391.7	391.5	391.4	391.4	391.3
32°	387.3	387.5	387.3	387.4	387.4	387.4
32.5°	382.8	382.4	382.8	383.3	383.5	383.6
33°	377.2	376.0	377.2	378.2	379.3	379.5
33.5°	370.2	368.8	370.2	372.0	374.0	375.1
34°	362.3	360.8	362.3	364.7	367.4	368.8
34.5°	354.0	352.5	354.0	356.2	359.3	360.5
35°	345.0	343.5	345.0	346.8	349.5	350.7
35.5°	334.9	333.4	334.9	336.8	339.3	340.0
36°	324.0	322.4	324.0	325.9	328.0	328.5
36.5°	312.1	310.4	312.1	314.1	315.9	316.3
37°	299.8	298.1	299.8	301.3	302.3	302.6
37.5°	286.8	285.4	286.8	287.7	288.1	288.6
38°	273.1	272.5	273.1	273.2	273.0	273.6
38.5°	258.9	259.4	258.9	258.4	258.2	259.1
39°	244.6	246.0	244.6	243.3	243.1	243.5
39.5°	230.1	232.0	230.1	228.5	228.1	227.9
40°	215.7	217.5	215.7	213.6	212.7	211.6
40.5°	201.5	203.1	201.5	199.2	197.4	195.9
41°	187.4	189.0	187.4	184.8	181.9	179.9
41.5°	173.4	174.9	173.4	170.3	166.7	164.6
42°	159.6	160.9	159.6	155.8	151.6	149.7
42.5°	146.0	147.3	146.0	142.2	137.5	135.2
43°	132.6	133.9	132.6	128.6	123.8	121.2
43.5°	119.4	121.3	119.4	115.3	110.7	108.2



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	83.6	86.2	83.6	78.7	73.9	71.7
45.5°	73.3	75.7	73.3	68.2	63.3	60.7
46°	63.7	66.6	63.7	58.8	53.2	51.0
46.5°	54.6	57.7	54.6	49.8	44.6	42.3
47°	45.9	48.7	45.9	41.2	36.8	35.4
47.5°	37.8	39.6	37.8	33.7	29.7	28.9
48°	30.6	32.5	30.6	26.9	23.9	23.0
48.5°	24.3	26.0	24.3	21.5	18.9	18.5
49°	19.2	20.2	19.2	16.6	14.4	13.9
49.5°	14.5	15.8	14.5	12.2	10.7	10.5
50°	11.4	12.0	11.4	9.3	7.3	7.5
50.5°	8.5	9.7	8.5	6.5	5.0	4.6
51°	5.7	7.4	5.7	4.5	3.4	2.5
51.5°	3.7	5.5	3.7	2.9	2.1	2.0
52°	2.3	3.6	2.3	1.9	1.8	1.7
52.5°	1.8	1.7	1.8	1.6	1.6	1.4
53°	1.5	1.4	1.5	1.5	1.4	1.4
53.5°	1.3	1.3	1.3	1.3	1.3	1.3
54°	1.2	1.2	1.2	1.2	1.2	1.2
54.5°	1.2	1.2	1.2	1.2	1.2	1.2
55°	1.1	1.1	1.1	1.1	1.1	1.1
55.5°	1.1	1.1	1.1	1.1	1.1	1.1
56°	0.9	0.9	0.9	0.9	0.9	0.9
56.5°	0.8	0.8	0.8	0.8	0.8	0.8
57°	0.8	0.8	0.8	0.8	0.8	0.8
57.5°	0.7	0.7	0.7	0.7	0.7	0.7
58°	0.7	0.7	0.7	0.7	0.7	0.7
58.5°	0.7	0.7	0.7	0.7	0.7	0.6
59°	0.6	0.6	0.6	0.6	0.6	0.6
59.5°	0.6	0.6	0.6	0.6	0.6	0.6
60°	0.5	0.5	0.5	0.5	0.5	0.5
60.5°	0.5	0.5	0.5	0.5	0.5	0.5
61°	0.5	0.5	0.5	0.5	0.5	0.5
61.5°	0.4	0.4	0.4	0.4	0.4	0.4
62°	0.4	0.4	0.4	0.4	0.4	0.4
62.5°	0.4	0.4	0.4	0.4	0.4	0.4
63°	0.4	0.4	0.4	0.4	0.4	0.4
63.5°	0.4	0.4	0.4	0.4	0.4	0.3
64°	0.3	0.3	0.3	0.3	0.3	0.3
64.5°	0.3	0.3	0.3	0.3	0.3	0.3
65°	0.3	0.3	0.3	0.3	0.3	0.3
65.5°	0.3	0.3	0.3	0.3	0.3	0.3
66°	0.3	0.3	0.3	0.3	0.3	0.3



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	0.2	0.2	0.2	0.2	0.2	0.2
68°	0.2	0.2	0.2	0.2	0.2	0.2
68.5°	0.2	0.2	0.2	0.2	0.2	0.2
69°	0.2	0.2	0.2	0.2	0.2	0.2
69.5°	0.2	0.2	0.2	0.2	0.2	0.2
70°	0.2	0.2	0.2	0.2	0.2	0.2
70.5°	0.2	0.2	0.2	0.2	0.2	0.1
71°	0.1	0.1	0.1	0.1	0.1	0.1
71.5°	0.1	0.1	0.1	0.1	0.1	0.1
72°	0.1	0.1	0.1	0.1	0.1	0.1
72.5°	0.1	0.1	0.1	0.1	0.1	0.1
73°	0.1	0.1	0.1	0.1	0.1	0.1
73.5°	0.1	0.1	0.1	0.1	0.1	0.1
74°	0.1	0.1	0.1	0.1	0.1	0.1
74.5°	0.1	0.1	0.1	0.1	0.1	0.1
75°	0.1	0.1	0.1	0.1	0.1	0.1
75.5°	0.1	0.1	0.1	0.1	0.1	0.1
76°	0.1	0.1	0.1	0.1	0.1	0.1
76.5°	0.1	0.1	0.1	0.1	0.1	0.1
77°	0.1	0.1	0.1	0.1	0.1	0.1
77.5°	0.1	0.1	0.1	0.1	0.1	0.0
78°	0.1	0.1	0.1	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775858

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-4000K

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°	494.2	494.1	493.8	493.5	493.4	493.5	493.8	494.1	494.2	494.1	493.8
22°	488.7	488.6	488.4	488.1	488.0	488.1	488.4	488.6	488.7	488.6	488.4



44°	95.6	97.6	102.4	106.7	109.2	106.7	102.4	97.6	95.6	97.6	102.4
44.5°	83.5	85.4	90.2	94.9	97.4	94.9	90.2	85.4	83.5	85.4	90.2



66.5°	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3
67°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2



89°	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0

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21.5°	493.5	493.4	493.5	493.8	494.1	494.2
22°	488.1	488.0	488.1	488.4	488.6	488.7



44°	106.7	109.2	106.7	102.4	97.6	95.6
44.5°	94.9	97.4	94.9	90.2	85.4	83.5

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66.5°	0.3	0.3	0.3	0.3	0.2	0.2
67°	0.2	0.2	0.2	0.2	0.2	0.2

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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)