

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: P775856

Luminaire Tested: HCDJBL510CSD-HCD82TRMB-1000lm-3000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775856
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-3000K
Description: 8 INCH ROUND NARROW MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 674.0 lumens
Efficiency: N/A
Efficacy: 67.4 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

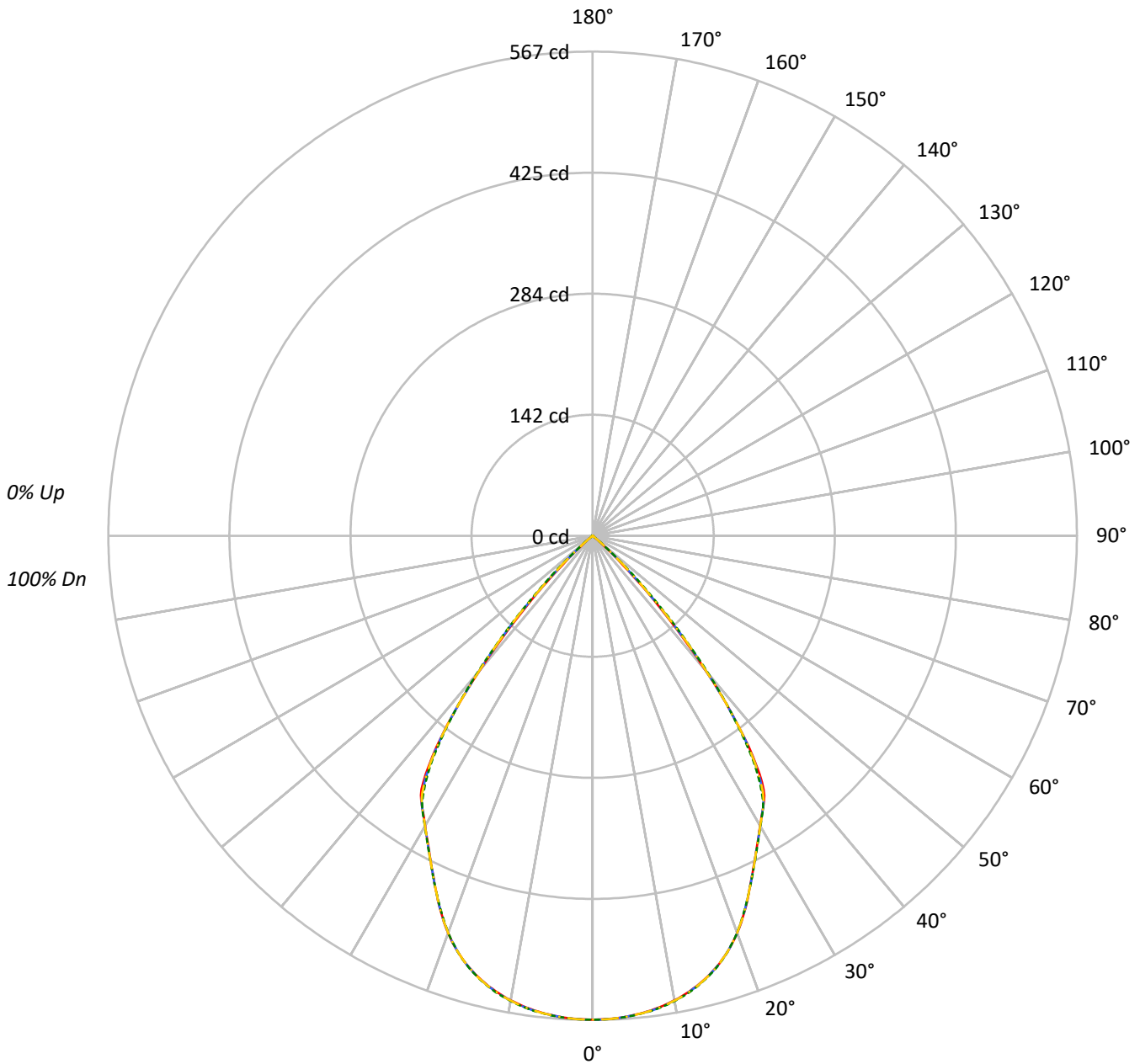
Input Watts (W): 10
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	99	98	97	96	95	93
	1	113	110	108	105	111	108	106	104	104	102	101	100	99	98	97	96	95	93	93	91	89	87	86	86	86
	2	107	102	98	94	105	100	97	93	97	94	91	94	92	89	91	89	87	86	86	85	82	81	79	79	79
	3	101	95	89	85	99	93	88	85	91	86	83	88	85	82	86	83	81	79	79	77	74	73	73	73	73
	4	96	88	82	77	94	87	81	77	84	80	76	82	78	75	81	77	74	73	73	72	69	67	67	67	67
	5	90	82	75	71	89	81	75	70	79	74	70	77	73	69	75	72	69	67	67	67	63	62	62	62	62
	6	85	76	70	65	84	75	69	65	74	68	64	72	67	64	71	67	63	62	62	62	58	55	53	53	53
	7	81	71	64	60	79	70	64	60	69	63	59	68	63	59	66	62	59	57	57	57	53	51	49	49	49
	8	76	66	60	55	75	66	60	55	64	59	55	63	58	55	62	58	55	53	53	53	49	47	45	45	45
	9	72	62	56	51	71	61	55	51	60	55	51	60	55	51	59	54	51	49	49	49	45	43	41	41	41
	10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47	45	45	45	41	39	37	37	37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17302	17302	17302	17302
5°	17260	17276	17260	17276
10°	17125	17150	17125	17150
15°	16796	16812	16796	16812
20°	16082	16066	16082	16066
25°	14856	14869	14856	14869
30°	13830	13851	13830	13851
35°	12694	12437	12694	12437
40°	8190	8421	8190	8421
45°	3005	3614	3005	3614
50°	342	551	342	551
55°	53	53	53	53
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: 3614 cd/sqm



TEST NUMBER: P775856

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.5	7.9
10°-20°	149.1	22.1
20°-30°	203.2	30.1
30°-40°	200.6	29.8
40°-50°	65.7	9.7
50°-60°	1.5	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°	405.7	60.2
0°-40°	606.4	90.0
0°-60°	673.6	99.9
0°-90°	674.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	674.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	567	567	567	567	567	
5°	563	564	563	564	563	53
15°	531	532	531	532	531	149
25°	441	441	441	441	441	203
35°	341	334	341	334	341	201
45°	70	84	70	84	70	62
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	



TEST NUMBER: P775856

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	566.7	566.7	566.7	566.7	566.7	566.7	566.7	566.7	566.7	566.7	566.7
0.5°	566.6	566.6	566.7	566.6	566.7	566.6	566.7	566.6	566.6	566.6	566.7
1°	566.5	566.5	566.6	566.5	566.7	566.5	566.6	566.5	566.5	566.5	566.6
1.5°	566.3	566.4	566.4	566.4	566.5	566.4	566.4	566.4	566.3	566.4	566.4
2°	566.1	566.1	566.2	566.2	566.3	566.2	566.2	566.1	566.1	566.1	566.2
2.5°	565.8	565.9	565.9	565.9	566.0	565.9	565.9	565.9	565.8	565.9	565.9
3°	565.5	565.5	565.6	565.6	565.7	565.6	565.6	565.5	565.5	565.5	565.6
3.5°	565.1	565.1	565.2	565.2	565.3	565.2	565.2	565.1	565.1	565.1	565.2
4°	564.6	564.6	564.7	564.7	564.9	564.7	564.7	564.6	564.6	564.6	564.7
4.5°	563.9	563.9	564.1	564.2	564.3	564.2	564.1	563.9	563.9	563.9	564.1
5°	563.2	563.3	563.4	563.5	563.7	563.5	563.4	563.3	563.2	563.3	563.4
5.5°	562.6	562.6	562.7	562.8	563.0	562.8	562.7	562.6	562.6	562.6	562.7
6°	561.8	561.8	562.0	562.1	562.3	562.1	562.0	561.8	561.8	561.8	562.0
6.5°	560.9	561.0	561.2	561.3	561.5	561.3	561.2	561.0	560.9	561.0	561.2
7°	560.0	560.0	560.3	560.4	560.6	560.4	560.3	560.0	560.0	560.0	560.3
7.5°	558.9	558.9	559.3	559.4	559.6	559.4	559.3	558.9	558.9	558.9	559.3
8°	557.8	557.9	558.1	558.3	558.5	558.3	558.1	557.9	557.8	557.9	558.1
8.5°	556.6	556.7	556.9	557.1	557.3	557.1	556.9	556.7	556.6	556.7	556.9
9°	555.3	555.4	555.7	555.9	556.1	555.9	555.7	555.4	555.3	555.4	555.7
9.5°	553.8	553.9	554.2	554.6	554.8	554.6	554.2	553.9	553.8	553.9	554.2
10°	552.4	552.5	552.7	553.0	553.2	553.0	552.7	552.5	552.4	552.5	552.7
10.5°	550.8	550.9	551.2	551.5	551.7	551.5	551.2	550.9	550.8	550.9	551.2
11°	549.1	549.2	549.6	549.8	550.0	549.8	549.6	549.2	549.1	549.2	549.6
11.5°	547.3	547.4	547.7	547.9	548.2	547.9	547.7	547.4	547.3	547.4	547.7
12°	545.5	545.5	545.8	546.1	546.3	546.1	545.8	545.5	545.5	545.5	545.8
12.5°	543.4	543.4	543.7	544.0	544.2	544.0	543.7	543.4	543.4	543.4	543.7
13°	541.3	541.4	541.6	541.9	542.0	541.9	541.6	541.4	541.3	541.4	541.6
13.5°	538.9	539.0	539.3	539.5	539.7	539.5	539.3	539.0	538.9	539.0	539.3
14°	536.6	536.7	536.9	537.1	537.3	537.1	536.9	536.7	536.6	536.7	536.9
14.5°	534.0	534.1	534.3	534.5	534.7	534.5	534.3	534.1	534.0	534.1	534.3
15°	531.4	531.4	531.6	531.8	531.9	531.8	531.6	531.4	531.4	531.4	531.6
15.5°	528.5	528.5	528.7	528.9	529.0	528.9	528.7	528.5	528.5	528.5	528.7
16°	525.5	525.6	525.7	525.8	526.0	525.8	525.7	525.6	525.5	525.6	525.7
16.5°	522.4	522.4	522.5	522.6	522.7	522.6	522.5	522.4	522.4	522.4	522.5
17°	519.0	519.0	519.1	519.2	519.3	519.2	519.1	519.0	519.0	519.0	519.1
17.5°	515.4	515.4	515.5	515.5	515.7	515.5	515.5	515.4	515.4	515.4	515.5
18°	511.9	511.8	511.8	511.8	511.9	511.8	511.8	511.8	511.9	511.8	511.8
18.5°	507.9	507.9	507.8	507.8	507.8	507.8	507.8	507.9	507.9	507.9	507.8
19°	503.8	503.8	503.7	503.6	503.6	503.6	503.7	503.8	503.8	503.8	503.7
19.5°	499.5	499.4	499.3	499.2	499.2	499.2	499.3	499.4	499.5	499.4	499.3
20°	495.0	494.9	494.8	494.6	494.5	494.6	494.8	494.9	495.0	494.9	494.8
20.5°	490.2	490.1	489.9	489.7	489.6	489.7	489.9	490.1	490.2	490.1	489.9
21°	485.2	485.2	485.0	484.6	484.4	484.6	485.0	485.2	485.2	485.2	485.0



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CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	469.2	469.2	469.0	468.7	468.7	468.7	469.0	469.2	469.2	469.2	469.0
23°	463.6	463.6	463.5	463.2	463.2	463.2	463.5	463.6	463.6	463.6	463.5
23.5°	457.9	458.0	457.9	457.7	457.7	457.7	457.9	458.0	457.9	458.0	457.9
24°	452.1	452.2	452.2	452.1	452.2	452.1	452.2	452.2	452.1	452.2	452.2
24.5°	446.6	446.6	446.7	446.6	446.8	446.6	446.7	446.6	446.6	446.6	446.7
25°	441.0	441.1	441.2	441.2	441.4	441.2	441.2	441.1	441.0	441.1	441.2
25.5°	435.7	435.7	435.8	435.9	436.1	435.9	435.8	435.7	435.7	435.7	435.8
26°	430.4	430.5	430.6	430.7	430.9	430.7	430.6	430.5	430.4	430.5	430.6
26.5°	425.2	425.3	425.4	425.5	425.8	425.5	425.4	425.3	425.2	425.3	425.4
27°	420.2	420.2	420.4	420.4	420.7	420.4	420.4	420.2	420.2	420.2	420.4
27.5°	415.2	415.3	415.4	415.6	415.8	415.6	415.4	415.3	415.2	415.3	415.4
28°	410.3	410.4	410.6	410.7	411.0	410.7	410.6	410.4	410.3	410.4	410.6
28.5°	405.6	405.8	405.9	406.0	406.3	406.0	405.9	405.8	405.6	405.8	405.9
29°	401.1	401.2	401.3	401.4	401.7	401.4	401.3	401.2	401.1	401.2	401.3
29.5°	396.6	396.7	396.9	397.0	397.2	397.0	396.9	396.7	396.6	396.7	396.9
30°	392.3	392.3	392.5	392.6	392.9	392.6	392.5	392.3	392.3	392.3	392.5
30.5°	388.0	388.1	388.2	388.4	388.6	388.4	388.2	388.1	388.0	388.1	388.2
31°	383.9	384.0	384.2	384.3	384.6	384.3	384.2	384.0	383.9	384.0	384.2
31.5°	380.1	380.2	380.2	380.3	380.5	380.3	380.2	380.2	380.1	380.2	380.2
32°	376.3	376.3	376.3	376.2	376.4	376.2	376.3	376.3	376.3	376.3	376.3
32.5°	372.6	372.5	372.3	371.9	371.5	371.9	372.3	372.5	372.6	372.5	372.3
33°	368.6	368.4	367.4	366.4	365.2	366.4	367.4	368.4	368.6	368.4	367.4
33.5°	364.3	363.3	361.4	359.6	358.2	359.6	361.4	363.3	364.3	363.3	361.4
34°	358.2	356.9	354.2	352.0	350.4	352.0	354.2	356.9	358.2	356.9	354.2
34.5°	350.1	349.0	346.0	343.9	342.4	343.9	346.0	349.0	350.1	349.0	346.0
35°	340.6	339.5	336.9	335.1	333.7	335.1	336.9	339.5	340.6	339.5	336.9
35.5°	330.2	329.6	327.2	325.3	323.9	325.3	327.2	329.6	330.2	329.6	327.2
36°	319.1	318.6	316.5	314.7	313.2	314.7	316.5	318.6	319.1	318.6	316.5
36.5°	307.2	306.8	305.1	303.2	301.5	303.2	305.1	306.8	307.2	306.8	305.1
37°	294.0	293.7	292.6	291.2	289.6	291.2	292.6	293.7	294.0	293.7	292.6
37.5°	280.3	279.9	279.5	278.6	277.2	278.6	279.5	279.9	280.3	279.9	279.5
38°	265.8	265.2	265.4	265.3	264.7	265.3	265.4	265.2	265.8	265.2	265.4
38.5°	251.7	250.8	251.0	251.5	252.0	251.5	251.0	250.8	251.7	250.8	251.0
39°	236.5	236.2	236.4	237.6	238.9	237.6	236.4	236.2	236.5	236.2	236.4
39.5°	221.4	221.6	222.0	223.5	225.4	223.5	222.0	221.6	221.4	221.6	222.0
40°	205.5	206.6	207.5	209.5	211.3	209.5	207.5	206.6	205.5	206.6	207.5
40.5°	190.3	191.8	193.5	195.7	197.3	195.7	193.5	191.8	190.3	191.8	193.5
41°	174.7	176.6	179.5	182.1	183.6	182.1	179.5	176.6	174.7	176.6	179.5
41.5°	159.9	161.9	165.4	168.5	169.9	168.5	165.4	161.9	159.9	161.9	165.4
42°	145.4	147.2	151.3	155.0	156.3	155.0	151.3	147.2	145.4	147.2	151.3
42.5°	131.3	133.6	138.2	141.8	143.1	141.8	138.2	133.6	131.3	133.6	138.2
43°	117.7	120.3	124.9	128.8	130.1	128.8	124.9	120.3	117.7	120.3	124.9
43.5°	105.1	107.5	112.0	116.0	117.8	116.0	112.0	107.5	105.1	107.5	112.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	69.6	71.8	76.5	81.2	83.7	81.2	76.5	71.8	69.6	71.8	76.5
45.5°	58.9	61.5	66.3	71.2	73.5	71.2	66.3	61.5	58.9	61.5	66.3
46°	49.5	51.7	57.1	61.9	64.7	61.9	57.1	51.7	49.5	51.7	57.1
46.5°	41.0	43.3	48.4	53.0	56.1	53.0	48.4	43.3	41.0	43.3	48.4
47°	34.4	35.7	40.0	44.6	47.3	44.6	40.0	35.7	34.4	35.7	40.0
47.5°	28.1	28.9	32.8	36.8	38.5	36.8	32.8	28.9	28.1	28.9	32.8
48°	22.4	23.2	26.1	29.7	31.6	29.7	26.1	23.2	22.4	23.2	26.1
48.5°	18.0	18.4	20.9	23.6	25.2	23.6	20.9	18.4	18.0	18.4	20.9
49°	13.5	14.0	16.1	18.7	19.6	18.7	16.1	14.0	13.5	14.0	16.1
49.5°	10.2	10.4	11.8	14.1	15.3	14.1	11.8	10.4	10.2	10.4	11.8
50°	7.2	7.0	9.0	11.0	11.6	11.0	9.0	7.0	7.2	7.0	9.0
50.5°	4.5	4.9	6.3	8.3	9.4	8.3	6.3	4.9	4.5	4.9	6.3
51°	2.5	3.3	4.4	5.5	7.1	5.5	4.4	3.3	2.5	3.3	4.4
51.5°	1.9	2.0	2.9	3.6	5.3	3.6	2.9	2.0	1.9	2.0	2.9
52°	1.6	1.7	1.8	2.2	3.5	2.2	1.8	1.7	1.6	1.7	1.8
52.5°	1.3	1.5	1.5	1.7	1.6	1.7	1.5	1.5	1.3	1.5	1.5
53°	1.3	1.3	1.4	1.4	1.3	1.4	1.4	1.3	1.3	1.3	1.4
53.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
54°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
54.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
55°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
55.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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: P775856

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-3000K

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: P775856

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-3000K

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: P775856

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	566.7	566.7	566.7	566.7	566.7	566.7
0.5°	566.6	566.7	566.6	566.7	566.6	566.6
1°	566.5	566.7	566.5	566.6	566.5	566.5
1.5°	566.4	566.5	566.4	566.4	566.4	566.3
2°	566.2	566.3	566.2	566.2	566.1	566.1
2.5°	565.9	566.0	565.9	565.9	565.9	565.8
3°	565.6	565.7	565.6	565.6	565.5	565.5
3.5°	565.2	565.3	565.2	565.2	565.1	565.1
4°	564.7	564.9	564.7	564.7	564.6	564.6
4.5°	564.2	564.3	564.2	564.1	563.9	563.9
5°	563.5	563.7	563.5	563.4	563.3	563.2
5.5°	562.8	563.0	562.8	562.7	562.6	562.6
6°	562.1	562.3	562.1	562.0	561.8	561.8
6.5°	561.3	561.5	561.3	561.2	561.0	560.9
7°	560.4	560.6	560.4	560.3	560.0	560.0
7.5°	559.4	559.6	559.4	559.3	558.9	558.9
8°	558.3	558.5	558.3	558.1	557.9	557.8
8.5°	557.1	557.3	557.1	556.9	556.7	556.6
9°	555.9	556.1	555.9	555.7	555.4	555.3
9.5°	554.6	554.8	554.6	554.2	553.9	553.8
10°	553.0	553.2	553.0	552.7	552.5	552.4
10.5°	551.5	551.7	551.5	551.2	550.9	550.8
11°	549.8	550.0	549.8	549.6	549.2	549.1
11.5°	547.9	548.2	547.9	547.7	547.4	547.3
12°	546.1	546.3	546.1	545.8	545.5	545.5
12.5°	544.0	544.2	544.0	543.7	543.4	543.4
13°	541.9	542.0	541.9	541.6	541.4	541.3
13.5°	539.5	539.7	539.5	539.3	539.0	538.9
14°	537.1	537.3	537.1	536.9	536.7	536.6
14.5°	534.5	534.7	534.5	534.3	534.1	534.0
15°	531.8	531.9	531.8	531.6	531.4	531.4
15.5°	528.9	529.0	528.9	528.7	528.5	528.5
16°	525.8	526.0	525.8	525.7	525.6	525.5
16.5°	522.6	522.7	522.6	522.5	522.4	522.4
17°	519.2	519.3	519.2	519.1	519.0	519.0
17.5°	515.5	515.7	515.5	515.5	515.4	515.4
18°	511.8	511.9	511.8	511.8	511.8	511.9
18.5°	507.8	507.8	507.8	507.8	507.9	507.9
19°	503.6	503.6	503.6	503.7	503.8	503.8
19.5°	499.2	499.2	499.2	499.3	499.4	499.5
20°	494.6	494.5	494.6	494.8	494.9	495.0
20.5°	489.7	489.6	489.7	489.9	490.1	490.2
21°	484.6	484.4	484.6	485.0	485.2	485.2



TEST NUMBER: P775856

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	468.7	468.7	468.7	469.0	469.2	469.2
23°	463.2	463.2	463.2	463.5	463.6	463.6
23.5°	457.7	457.7	457.7	457.9	458.0	457.9
24°	452.1	452.2	452.1	452.2	452.2	452.1
24.5°	446.6	446.8	446.6	446.7	446.6	446.6
25°	441.2	441.4	441.2	441.2	441.1	441.0
25.5°	435.9	436.1	435.9	435.8	435.7	435.7
26°	430.7	430.9	430.7	430.6	430.5	430.4
26.5°	425.5	425.8	425.5	425.4	425.3	425.2
27°	420.4	420.7	420.4	420.4	420.2	420.2
27.5°	415.6	415.8	415.6	415.4	415.3	415.2
28°	410.7	411.0	410.7	410.6	410.4	410.3
28.5°	406.0	406.3	406.0	405.9	405.8	405.6
29°	401.4	401.7	401.4	401.3	401.2	401.1
29.5°	397.0	397.2	397.0	396.9	396.7	396.6
30°	392.6	392.9	392.6	392.5	392.3	392.3
30.5°	388.4	388.6	388.4	388.2	388.1	388.0
31°	384.3	384.6	384.3	384.2	384.0	383.9
31.5°	380.3	380.5	380.3	380.2	380.2	380.1
32°	376.2	376.4	376.2	376.3	376.3	376.3
32.5°	371.9	371.5	371.9	372.3	372.5	372.6
33°	366.4	365.2	366.4	367.4	368.4	368.6
33.5°	359.6	358.2	359.6	361.4	363.3	364.3
34°	352.0	350.4	352.0	354.2	356.9	358.2
34.5°	343.9	342.4	343.9	346.0	349.0	350.1
35°	335.1	333.7	335.1	336.9	339.5	340.6
35.5°	325.3	323.9	325.3	327.2	329.6	330.2
36°	314.7	313.2	314.7	316.5	318.6	319.1
36.5°	303.2	301.5	303.2	305.1	306.8	307.2
37°	291.2	289.6	291.2	292.6	293.7	294.0
37.5°	278.6	277.2	278.6	279.5	279.9	280.3
38°	265.3	264.7	265.3	265.4	265.2	265.8
38.5°	251.5	252.0	251.5	251.0	250.8	251.7
39°	237.6	238.9	237.6	236.4	236.2	236.5
39.5°	223.5	225.4	223.5	222.0	221.6	221.4
40°	209.5	211.3	209.5	207.5	206.6	205.5
40.5°	195.7	197.3	195.7	193.5	191.8	190.3
41°	182.1	183.6	182.1	179.5	176.6	174.7
41.5°	168.5	169.9	168.5	165.4	161.9	159.9
42°	155.0	156.3	155.0	151.3	147.2	145.4
42.5°	141.8	143.1	141.8	138.2	133.6	131.3
43°	128.8	130.1	128.8	124.9	120.3	117.7
43.5°	116.0	117.8	116.0	112.0	107.5	105.1



TEST NUMBER: P775856

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	81.2	83.7	81.2	76.5	71.8	69.6
45.5°	71.2	73.5	71.2	66.3	61.5	58.9
46°	61.9	64.7	61.9	57.1	51.7	49.5
46.5°	53.0	56.1	53.0	48.4	43.3	41.0
47°	44.6	47.3	44.6	40.0	35.7	34.4
47.5°	36.8	38.5	36.8	32.8	28.9	28.1
48°	29.7	31.6	29.7	26.1	23.2	22.4
48.5°	23.6	25.2	23.6	20.9	18.4	18.0
49°	18.7	19.6	18.7	16.1	14.0	13.5
49.5°	14.1	15.3	14.1	11.8	10.4	10.2
50°	11.0	11.6	11.0	9.0	7.0	7.2
50.5°	8.3	9.4	8.3	6.3	4.9	4.5
51°	5.5	7.1	5.5	4.4	3.3	2.5
51.5°	3.6	5.3	3.6	2.9	2.0	1.9
52°	2.2	3.5	2.2	1.8	1.7	1.6
52.5°	1.7	1.6	1.7	1.5	1.5	1.3
53°	1.4	1.3	1.4	1.4	1.3	1.3
53.5°	1.2	1.2	1.2	1.2	1.2	1.2
54°	1.1	1.1	1.1	1.1	1.1	1.1
54.5°	1.1	1.1	1.1	1.1	1.1	1.1
55°	1.0	1.0	1.0	1.0	1.0	1.0
55.5°	1.0	1.0	1.0	1.0	1.0	1.0
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: P775856

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-3000K

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: P775856

CATALOG NUMBER: HCDJBL510CSD-HCD82TRMB-1000lm-3000K

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°	480.0	479.9	479.7	479.4	479.3	479.4	479.7	479.9	480.0	479.9	479.7
22°	474.7	474.6	474.4	474.1	474.0	474.1	474.4	474.6	474.7	474.6	474.4



44°	92.8	94.8	99.5	103.6	106.1	103.6	99.5	94.8	92.8	94.8	99.5
44.5°	81.1	82.9	87.6	92.2	94.7	92.2	87.6	82.9	81.1	82.9	87.6



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°	479.4	479.3	479.4	479.7	479.9	480.0
22°	474.1	474.0	474.1	474.4	474.6	474.7



44°	103.6	106.1	103.6	99.5	94.8	92.8
44.5°	92.2	94.7	92.2	87.6	82.9	81.1

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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)