

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: P775821

Luminaire Tested: HCDJBL510CSD-HCD81TRH-1000lm-3000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775821
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B043-HCD81TRH)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD81TRH-1000lm-3000K
Description: 8 INCH ROUND SHALLOW-WIDE HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

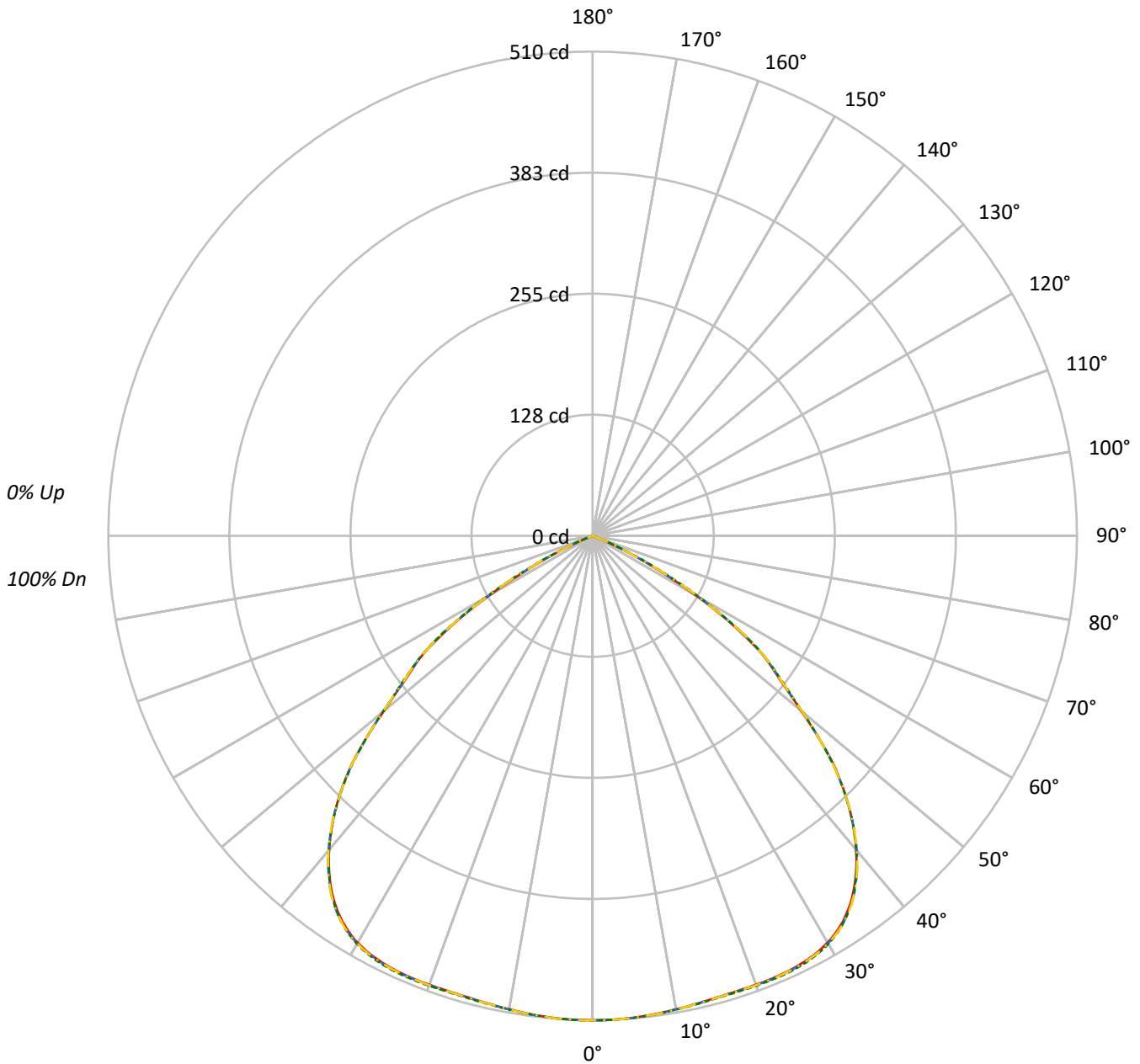
Lumens per Lamp: N/A
Luminaire Lumens: 1239.9 lumens
Efficiency: N/A
Efficacy: 124.0 lumens/watt
Spacing Criteria (0/90/45): 1.42 / 1.42 / 1.43
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89								
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78								
3	96	87	80	75	93	85	79	74	82	77	73	80	75	71	77	74	70	68								
4	88	78	70	65	86	77	70	64	74	68	63	72	67	63	70	66	62	60								
5	82	70	62	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53								
6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	47								
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41								
8	65	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37								
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33								
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	42	36	32	30								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	15586	15586	15586	15586
5°	15608	15615	15608	15615
10°	15699	15711	15699	15711
15°	15921	15943	15921	15943
20°	16349	16385	16349	16385
25°	16917	16968	16917	16968
30°	17447	17496	17447	17496
35°	17629	17670	17629	17670
40°	17201	17209	17201	17209
45°	16044	16023	16044	16023
50°	13613	13712	13613	13712
55°	11641	11705	11641	11705
60°	7657	7956	7657	7956
65°	2702	3251	2702	3251
70°	45	250	45	250
75°	12	12	12	12
80°	0	18	0	18
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 16044 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.5	3.9
10°-20°	143.0	11.5
20°-30°	232.2	18.7
30°-40°	294.8	23.8
40°-50°	282.8	22.8
50°-60°	190.3	15.3
60°-70°	48.1	3.9
70°-80°	0.2	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°	423.7	34.2
0°-40°	718.5	57.9
0°-60°	1191.6	96.1
0°-90°	1239.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1239.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	510	510	510	510	510	
5°	509	510	509	510	509	49
15°	504	504	504	504	504	143
25°	502	504	502	504	502	232
35°	473	474	473	474	473	294
45°	372	371	372	371	372	283
55°	219	220	219	220	219	189
65°	37	45	37	45	37	45
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°	510.5	510.5	510.5	510.5	510.5	510.5	510.5	510.5	510.5	510.5	510.5
0.5°	510.4	510.4	510.5	510.6	510.5	510.6	510.5	510.4	510.4	510.4	510.5
1°	510.4	510.4	510.5	510.6	510.4	510.6	510.5	510.4	510.4	510.4	510.5
1.5°	510.3	510.3	510.4	510.5	510.4	510.5	510.4	510.3	510.3	510.3	510.4
2°	510.2	510.2	510.4	510.4	510.3	510.4	510.4	510.2	510.2	510.2	510.4
2.5°	510.1	510.2	510.3	510.4	510.2	510.4	510.3	510.2	510.1	510.2	510.3
3°	510.0	510.0	510.2	510.2	510.1	510.2	510.2	510.0	510.0	510.0	510.2
3.5°	509.8	509.9	510.0	510.1	510.0	510.1	510.0	509.9	509.8	509.9	510.0
4°	509.7	509.7	509.8	510.0	509.8	510.0	509.8	509.7	509.7	509.7	509.8
4.5°	509.5	509.6	509.7	509.8	509.7	509.8	509.7	509.6	509.5	509.6	509.7
5°	509.3	509.4	509.5	509.6	509.5	509.6	509.5	509.4	509.3	509.4	509.5
5.5°	509.1	509.1	509.3	509.4	509.3	509.4	509.3	509.1	509.1	509.1	509.3
6°	508.8	508.9	509.0	509.2	509.1	509.2	509.0	508.9	508.8	508.9	509.0
6.5°	508.6	508.7	508.8	509.0	508.8	509.0	508.8	508.7	508.6	508.7	508.8
7°	508.3	508.4	508.6	508.7	508.6	508.7	508.6	508.4	508.3	508.4	508.6
7.5°	508.0	508.1	508.3	508.4	508.3	508.4	508.3	508.1	508.0	508.1	508.3
8°	507.8	507.8	508.0	508.2	508.1	508.2	508.0	507.8	507.8	507.8	508.0
8.5°	507.4	507.4	507.7	507.8	507.8	507.8	507.7	507.4	507.4	507.4	507.7
9°	507.0	507.1	507.3	507.6	507.4	507.6	507.3	507.1	507.0	507.1	507.3
9.5°	506.7	506.8	507.0	507.2	507.1	507.2	507.0	506.8	506.7	506.8	507.0
10°	506.4	506.5	506.7	506.9	506.8	506.9	506.7	506.5	506.4	506.5	506.7
10.5°	506.1	506.2	506.3	506.6	506.5	506.6	506.3	506.2	506.1	506.2	506.3
11°	505.8	505.8	506.0	506.3	506.2	506.3	506.0	505.8	505.8	505.8	506.0
11.5°	505.5	505.5	505.7	506.0	505.9	506.0	505.7	505.5	505.5	505.5	505.7
12°	505.2	505.2	505.4	505.7	505.7	505.7	505.4	505.2	505.2	505.2	505.4
12.5°	504.9	504.9	505.2	505.4	505.4	505.4	505.2	504.9	504.9	504.9	505.2
13°	504.6	504.7	504.9	505.1	505.2	505.1	504.9	504.7	504.6	504.7	504.9
13.5°	504.3	504.4	504.7	504.9	504.9	504.9	504.7	504.4	504.3	504.4	504.7
14°	504.1	504.2	504.4	504.7	504.7	504.7	504.4	504.2	504.1	504.2	504.4
14.5°	503.9	504.0	504.2	504.5	504.6	504.5	504.2	504.0	503.9	504.0	504.2
15°	503.7	503.8	504.0	504.4	504.4	504.4	504.0	503.8	503.7	503.8	504.0
15.5°	503.5	503.6	503.9	504.2	504.3	504.2	503.9	503.6	503.5	503.6	503.9
16°	503.4	503.5	503.7	504.1	504.2	504.1	503.7	503.5	503.4	503.5	503.7
16.5°	503.3	503.4	503.6	504.0	504.1	504.0	503.6	503.4	503.3	503.4	503.6
17°	503.2	503.3	503.6	504.0	504.1	504.0	503.6	503.3	503.2	503.3	503.6
17.5°	503.2	503.3	503.5	504.0	504.1	504.0	503.5	503.3	503.2	503.3	503.5
18°	503.1	503.2	503.5	504.0	504.1	504.0	503.5	503.2	503.1	503.2	503.5
18.5°	503.1	503.2	503.5	504.0	504.1	504.0	503.5	503.2	503.1	503.2	503.5
19°	503.2	503.2	503.5	504.1	504.2	504.1	503.5	503.2	503.2	503.2	503.5
19.5°	503.2	503.3	503.6	504.1	504.3	504.1	503.6	503.3	503.2	503.3	503.6
20°	503.2	503.3	503.6	504.2	504.3	504.2	503.6	503.3	503.2	503.3	503.6
20.5°	503.3	503.3	503.7	504.2	504.4	504.2	503.7	503.3	503.3	503.3	503.7
21°	503.3	503.4	503.7	504.3	504.4	504.3	503.7	503.4	503.3	503.4	503.7



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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°	503.2	503.3	503.7	504.3	504.5	504.3	503.7	503.3	503.2	503.3	503.7
23°	503.1	503.2	503.6	504.2	504.4	504.2	503.6	503.2	503.1	503.2	503.6
23.5°	503.0	503.1	503.5	504.1	504.3	504.1	503.5	503.1	503.0	503.1	503.5
24°	502.9	502.9	503.3	504.0	504.2	504.0	503.3	502.9	502.9	502.9	503.3
24.5°	502.5	502.7	503.1	503.8	504.0	503.8	503.1	502.7	502.5	502.7	503.1
25°	502.2	502.3	502.9	503.6	503.7	503.6	502.9	502.3	502.2	502.3	502.9
25.5°	501.9	502.0	502.5	503.3	503.4	503.3	502.5	502.0	501.9	502.0	502.5
26°	501.5	501.6	502.1	502.9	503.1	502.9	502.1	501.6	501.5	501.6	502.1
26.5°	501.0	501.1	501.7	502.4	502.5	502.4	501.7	501.1	501.0	501.1	501.7
27°	500.5	500.6	501.1	501.8	501.9	501.8	501.1	500.6	500.5	500.6	501.1
27.5°	499.8	500.0	500.5	501.2	501.3	501.2	500.5	500.0	499.8	500.0	500.5
28°	499.1	499.2	499.8	500.5	500.6	500.5	499.8	499.2	499.1	499.2	499.8
28.5°	498.3	498.4	499.0	499.7	499.7	499.7	499.0	498.4	498.3	498.4	499.0
29°	497.2	497.4	498.1	498.7	498.8	498.7	498.1	497.4	497.2	497.4	498.1
29.5°	496.1	496.3	497.0	497.6	497.6	497.6	497.0	496.3	496.1	496.3	497.0
30°	494.9	495.1	495.8	496.4	496.3	496.4	495.8	495.1	494.9	495.1	495.8
30.5°	493.6	493.8	494.5	495.1	495.0	495.1	494.5	493.8	493.6	493.8	494.5
31°	492.0	492.2	493.1	493.6	493.4	493.6	493.1	492.2	492.0	492.2	493.1
31.5°	490.3	490.6	491.4	491.8	491.6	491.8	491.4	490.6	490.3	490.6	491.4
32°	488.4	488.8	489.6	490.0	489.8	490.0	489.6	488.8	488.4	488.8	489.6
32.5°	486.3	486.7	487.5	487.8	487.6	487.8	487.5	486.7	486.3	486.7	487.5
33°	484.1	484.5	485.4	485.6	485.3	485.6	485.4	484.5	484.1	484.5	485.4
33.5°	481.5	482.0	482.9	483.2	482.8	483.2	482.9	482.0	481.5	482.0	482.9
34°	479.0	479.5	480.4	480.5	480.1	480.5	480.4	479.5	479.0	479.5	480.4
34.5°	476.0	476.6	477.5	477.5	477.1	477.5	477.5	476.6	476.0	476.6	477.5
35°	473.0	473.6	474.6	474.5	474.1	474.5	474.6	473.6	473.0	473.6	474.6
35.5°	469.8	470.3	471.3	471.2	470.8	471.2	471.3	470.3	469.8	470.3	471.3
36°	466.3	466.9	467.9	467.7	467.2	467.7	467.9	466.9	466.3	466.9	467.9
36.5°	462.7	463.2	464.3	464.1	463.5	464.1	464.3	463.2	462.7	463.2	464.3
37°	458.8	459.4	460.3	460.2	459.6	460.2	460.3	459.4	458.8	459.4	460.3
37.5°	454.8	455.3	456.3	456.0	455.4	456.0	456.3	455.3	454.8	455.3	456.3
38°	450.5	451.1	452.0	451.7	451.0	451.7	452.0	451.1	450.5	451.1	452.0
38.5°	446.0	446.6	447.5	447.1	446.5	447.1	447.5	446.6	446.0	446.6	447.5
39°	441.5	442.0	442.8	442.5	441.8	442.5	442.8	442.0	441.5	442.0	442.8
39.5°	436.7	437.1	437.9	437.6	436.9	437.6	437.9	437.1	436.7	437.1	437.9
40°	431.6	432.0	432.8	432.5	431.8	432.5	432.8	432.0	431.6	432.0	432.8
40.5°	426.5	426.8	427.5	427.2	426.5	427.2	427.5	426.8	426.5	426.8	427.5
41°	421.1	421.4	422.0	421.8	421.1	421.8	422.0	421.4	421.1	421.4	422.0
41.5°	415.6	415.8	416.4	416.0	415.5	416.0	416.4	415.8	415.6	415.8	416.4
42°	409.9	410.1	410.5	410.3	409.8	410.3	410.5	410.1	409.9	410.1	410.5
42.5°	404.0	404.0	404.4	404.2	403.7	404.2	404.4	404.0	404.0	404.0	404.4
43°	397.9	397.9	398.2	398.0	397.5	398.0	398.2	397.9	397.9	397.9	398.2
43.5°	391.6	391.6	391.7	391.5	391.2	391.5	391.7	391.6	391.6	391.6	391.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	371.6	371.3	371.3	371.2	371.1	371.2	371.3	371.3	371.6	371.3	371.3
45.5°	364.4	364.1	364.0	363.9	363.8	363.9	364.0	364.1	364.4	364.1	364.0
46°	357.1	356.7	356.6	356.6	356.5	356.6	356.6	356.7	357.1	356.7	356.6
46.5°	349.4	349.0	348.9	348.8	348.7	348.8	348.9	349.0	349.4	349.0	348.9
47°	341.3	340.9	340.5	340.3	340.1	340.3	340.5	340.9	341.3	340.9	340.5
47.5°	332.4	332.0	331.6	331.7	331.6	331.7	331.6	332.0	332.4	332.0	331.6
48°	323.0	322.9	323.1	323.2	323.3	323.2	323.1	322.9	323.0	322.9	323.1
48.5°	314.0	314.0	314.4	314.5	314.5	314.5	314.4	314.0	314.0	314.0	314.4
49°	305.3	305.2	305.5	305.6	305.7	305.6	305.5	305.2	305.3	305.2	305.5
49.5°	295.9	296.0	296.7	297.1	297.2	297.1	296.7	296.0	295.9	296.0	296.7
50°	286.6	287.1	287.9	288.4	288.7	288.4	287.9	287.1	286.6	287.1	287.9
50.5°	278.1	278.6	279.4	279.9	280.1	279.9	279.4	278.6	278.1	278.6	279.4
51°	270.2	270.5	271.3	271.7	271.9	271.7	271.3	270.5	270.2	270.5	271.3
51.5°	262.7	262.9	263.8	264.5	264.8	264.5	263.8	262.9	262.7	262.9	263.8
52°	255.2	255.6	256.5	257.5	257.9	257.5	256.5	255.6	255.2	255.6	256.5
52.5°	248.5	248.9	249.9	250.8	251.4	250.8	249.9	248.9	248.5	248.9	249.9
53°	242.2	242.6	243.8	244.7	245.1	244.7	243.8	242.6	242.2	242.6	243.8
53.5°	236.4	236.8	237.9	238.7	239.1	238.7	237.9	236.8	236.4	236.8	237.9
54°	230.9	231.2	232.1	232.6	232.8	232.6	232.1	231.2	230.9	231.2	232.1
54.5°	225.1	225.4	226.1	226.7	226.8	226.7	226.1	225.4	225.1	225.4	226.1
55°	218.7	219.0	219.7	220.1	219.9	220.1	219.7	219.0	218.7	219.0	219.7
55.5°	211.2	211.5	212.3	212.7	212.6	212.7	212.3	211.5	211.2	211.5	212.3
56°	202.9	203.3	204.4	204.9	204.8	204.9	204.4	203.3	202.9	203.3	204.4
56.5°	194.2	194.8	195.7	196.5	196.4	196.5	195.7	194.8	194.2	194.8	195.7
57°	185.0	185.5	186.8	187.3	187.4	187.3	186.8	185.5	185.0	185.5	186.8
57.5°	175.4	176.0	177.4	178.0	178.1	178.0	177.4	176.0	175.4	176.0	177.4
58°	165.7	166.3	167.7	168.6	168.8	168.6	167.7	166.3	165.7	166.3	167.7
58.5°	155.8	156.3	157.8	158.9	159.2	158.9	157.8	156.3	155.8	156.3	157.8
59°	145.8	146.3	147.7	149.2	149.7	149.2	147.7	146.3	145.8	146.3	147.7
59.5°	135.6	136.2	137.8	139.5	140.0	139.5	137.8	136.2	135.6	136.2	137.8
60°	125.4	126.3	127.9	130.1	130.3	130.1	127.9	126.3	125.4	126.3	127.9
60.5°	115.4	116.2	118.4	120.4	120.8	120.4	118.4	116.2	115.4	116.2	118.4
61°	105.6	106.6	109.0	110.9	111.4	110.9	109.0	106.6	105.6	106.6	109.0
61.5°	96.2	97.1	99.7	101.4	102.3	101.4	99.7	97.1	96.2	97.1	99.7
62°	86.9	87.8	90.5	92.2	93.2	92.2	90.5	87.8	86.9	87.8	90.5
62.5°	77.6	78.8	81.7	83.3	84.4	83.3	81.7	78.8	77.6	78.8	81.7
63°	68.5	70.0	73.0	74.7	76.1	74.7	73.0	70.0	68.5	70.0	73.0
63.5°	60.1	61.5	64.6	66.5	67.8	66.5	64.6	61.5	60.1	61.5	64.6
64°	52.2	53.6	56.5	58.6	59.8	58.6	56.5	53.6	52.2	53.6	56.5
64.5°	44.6	45.9	48.7	51.1	52.4	51.1	48.7	45.9	44.6	45.9	48.7
65°	37.4	39.2	41.5	43.9	45.0	43.9	41.5	39.2	37.4	39.2	41.5
65.5°	31.0	32.8	34.8	37.2	38.2	37.2	34.8	32.8	31.0	32.8	34.8
66°	25.0	26.7	28.8	31.0	31.5	31.0	28.8	26.7	25.0	26.7	28.8



TEST NUMBER: P775821

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	10.0	12.8	13.8	15.7	15.8	15.7	13.8	12.8	10.0	12.8	13.8
68°	6.1	9.0	10.0	11.9	11.7	11.9	10.0	9.0	6.1	9.0	10.0
68.5°	2.7	5.8	7.0	8.5	9.4	8.5	7.0	5.8	2.7	5.8	7.0
69°	1.4	3.6	4.6	5.5	7.2	5.5	4.6	3.6	1.4	3.6	4.6
69.5°	0.9	1.7	2.6	3.3	5.0	3.3	2.6	1.7	0.9	1.7	2.6
70°	0.5	1.0	1.2	1.4	2.8	1.4	1.2	1.0	0.5	1.0	1.2
70.5°	0.2	0.5	0.7	0.6	0.8	0.6	0.7	0.5	0.2	0.5	0.7
71°	0.2	0.3	0.4	0.3	0.3	0.3	0.4	0.3	0.2	0.3	0.4
71.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
72°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
72.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
73°	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2
73.5°	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2
74°	0.1	0.1	0.1	0.2	0.2	0.2	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°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
78°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
78.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
79°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
79.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
80°	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
80.5°	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
81°	0.0	0.0	0.0	0.0	0.1	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: P775821
CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-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: P775821

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	510.5	510.5	510.5	510.5	510.5	510.5
0.5°	510.6	510.5	510.6	510.5	510.4	510.4
1°	510.6	510.4	510.6	510.5	510.4	510.4
1.5°	510.5	510.4	510.5	510.4	510.3	510.3
2°	510.4	510.3	510.4	510.4	510.2	510.2
2.5°	510.4	510.2	510.4	510.3	510.2	510.1
3°	510.2	510.1	510.2	510.2	510.0	510.0
3.5°	510.1	510.0	510.1	510.0	509.9	509.8
4°	510.0	509.8	510.0	509.8	509.7	509.7
4.5°	509.8	509.7	509.8	509.7	509.6	509.5
5°	509.6	509.5	509.6	509.5	509.4	509.3
5.5°	509.4	509.3	509.4	509.3	509.1	509.1
6°	509.2	509.1	509.2	509.0	508.9	508.8
6.5°	509.0	508.8	509.0	508.8	508.7	508.6
7°	508.7	508.6	508.7	508.6	508.4	508.3
7.5°	508.4	508.3	508.4	508.3	508.1	508.0
8°	508.2	508.1	508.2	508.0	507.8	507.8
8.5°	507.8	507.8	507.8	507.7	507.4	507.4
9°	507.6	507.4	507.6	507.3	507.1	507.0
9.5°	507.2	507.1	507.2	507.0	506.8	506.7
10°	506.9	506.8	506.9	506.7	506.5	506.4
10.5°	506.6	506.5	506.6	506.3	506.2	506.1
11°	506.3	506.2	506.3	506.0	505.8	505.8
11.5°	506.0	505.9	506.0	505.7	505.5	505.5
12°	505.7	505.7	505.7	505.4	505.2	505.2
12.5°	505.4	505.4	505.4	505.2	504.9	504.9
13°	505.1	505.2	505.1	504.9	504.7	504.6
13.5°	504.9	504.9	504.9	504.7	504.4	504.3
14°	504.7	504.7	504.7	504.4	504.2	504.1
14.5°	504.5	504.6	504.5	504.2	504.0	503.9
15°	504.4	504.4	504.4	504.0	503.8	503.7
15.5°	504.2	504.3	504.2	503.9	503.6	503.5
16°	504.1	504.2	504.1	503.7	503.5	503.4
16.5°	504.0	504.1	504.0	503.6	503.4	503.3
17°	504.0	504.1	504.0	503.6	503.3	503.2
17.5°	504.0	504.1	504.0	503.5	503.3	503.2
18°	504.0	504.1	504.0	503.5	503.2	503.1
18.5°	504.0	504.1	504.0	503.5	503.2	503.1
19°	504.1	504.2	504.1	503.5	503.2	503.2
19.5°	504.1	504.3	504.1	503.6	503.3	503.2
20°	504.2	504.3	504.2	503.6	503.3	503.2
20.5°	504.2	504.4	504.2	503.7	503.3	503.3
21°	504.3	504.4	504.3	503.7	503.4	503.3



TEST NUMBER: P775821

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	504.3	504.5	504.3	503.7	503.3	503.2
23°	504.2	504.4	504.2	503.6	503.2	503.1
23.5°	504.1	504.3	504.1	503.5	503.1	503.0
24°	504.0	504.2	504.0	503.3	502.9	502.9
24.5°	503.8	504.0	503.8	503.1	502.7	502.5
25°	503.6	503.7	503.6	502.9	502.3	502.2
25.5°	503.3	503.4	503.3	502.5	502.0	501.9
26°	502.9	503.1	502.9	502.1	501.6	501.5
26.5°	502.4	502.5	502.4	501.7	501.1	501.0
27°	501.8	501.9	501.8	501.1	500.6	500.5
27.5°	501.2	501.3	501.2	500.5	500.0	499.8
28°	500.5	500.6	500.5	499.8	499.2	499.1
28.5°	499.7	499.7	499.7	499.0	498.4	498.3
29°	498.7	498.8	498.7	498.1	497.4	497.2
29.5°	497.6	497.6	497.6	497.0	496.3	496.1
30°	496.4	496.3	496.4	495.8	495.1	494.9
30.5°	495.1	495.0	495.1	494.5	493.8	493.6
31°	493.6	493.4	493.6	493.1	492.2	492.0
31.5°	491.8	491.6	491.8	491.4	490.6	490.3
32°	490.0	489.8	490.0	489.6	488.8	488.4
32.5°	487.8	487.6	487.8	487.5	486.7	486.3
33°	485.6	485.3	485.6	485.4	484.5	484.1
33.5°	483.2	482.8	483.2	482.9	482.0	481.5
34°	480.5	480.1	480.5	480.4	479.5	479.0
34.5°	477.5	477.1	477.5	477.5	476.6	476.0
35°	474.5	474.1	474.5	474.6	473.6	473.0
35.5°	471.2	470.8	471.2	471.3	470.3	469.8
36°	467.7	467.2	467.7	467.9	466.9	466.3
36.5°	464.1	463.5	464.1	464.3	463.2	462.7
37°	460.2	459.6	460.2	460.3	459.4	458.8
37.5°	456.0	455.4	456.0	456.3	455.3	454.8
38°	451.7	451.0	451.7	452.0	451.1	450.5
38.5°	447.1	446.5	447.1	447.5	446.6	446.0
39°	442.5	441.8	442.5	442.8	442.0	441.5
39.5°	437.6	436.9	437.6	437.9	437.1	436.7
40°	432.5	431.8	432.5	432.8	432.0	431.6
40.5°	427.2	426.5	427.2	427.5	426.8	426.5
41°	421.8	421.1	421.8	422.0	421.4	421.1
41.5°	416.0	415.5	416.0	416.4	415.8	415.6
42°	410.3	409.8	410.3	410.5	410.1	409.9
42.5°	404.2	403.7	404.2	404.4	404.0	404.0
43°	398.0	397.5	398.0	398.2	397.9	397.9
43.5°	391.5	391.2	391.5	391.7	391.6	391.6



TEST NUMBER: P775821

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	371.2	371.1	371.2	371.3	371.3	371.6
45.5°	363.9	363.8	363.9	364.0	364.1	364.4
46°	356.6	356.5	356.6	356.6	356.7	357.1
46.5°	348.8	348.7	348.8	348.9	349.0	349.4
47°	340.3	340.1	340.3	340.5	340.9	341.3
47.5°	331.7	331.6	331.7	331.6	332.0	332.4
48°	323.2	323.3	323.2	323.1	322.9	323.0
48.5°	314.5	314.5	314.5	314.4	314.0	314.0
49°	305.6	305.7	305.6	305.5	305.2	305.3
49.5°	297.1	297.2	297.1	296.7	296.0	295.9
50°	288.4	288.7	288.4	287.9	287.1	286.6
50.5°	279.9	280.1	279.9	279.4	278.6	278.1
51°	271.7	271.9	271.7	271.3	270.5	270.2
51.5°	264.5	264.8	264.5	263.8	262.9	262.7
52°	257.5	257.9	257.5	256.5	255.6	255.2
52.5°	250.8	251.4	250.8	249.9	248.9	248.5
53°	244.7	245.1	244.7	243.8	242.6	242.2
53.5°	238.7	239.1	238.7	237.9	236.8	236.4
54°	232.6	232.8	232.6	232.1	231.2	230.9
54.5°	226.7	226.8	226.7	226.1	225.4	225.1
55°	220.1	219.9	220.1	219.7	219.0	218.7
55.5°	212.7	212.6	212.7	212.3	211.5	211.2
56°	204.9	204.8	204.9	204.4	203.3	202.9
56.5°	196.5	196.4	196.5	195.7	194.8	194.2
57°	187.3	187.4	187.3	186.8	185.5	185.0
57.5°	178.0	178.1	178.0	177.4	176.0	175.4
58°	168.6	168.8	168.6	167.7	166.3	165.7
58.5°	158.9	159.2	158.9	157.8	156.3	155.8
59°	149.2	149.7	149.2	147.7	146.3	145.8
59.5°	139.5	140.0	139.5	137.8	136.2	135.6
60°	130.1	130.3	130.1	127.9	126.3	125.4
60.5°	120.4	120.8	120.4	118.4	116.2	115.4
61°	110.9	111.4	110.9	109.0	106.6	105.6
61.5°	101.4	102.3	101.4	99.7	97.1	96.2
62°	92.2	93.2	92.2	90.5	87.8	86.9
62.5°	83.3	84.4	83.3	81.7	78.8	77.6
63°	74.7	76.1	74.7	73.0	70.0	68.5
63.5°	66.5	67.8	66.5	64.6	61.5	60.1
64°	58.6	59.8	58.6	56.5	53.6	52.2
64.5°	51.1	52.4	51.1	48.7	45.9	44.6
65°	43.9	45.0	43.9	41.5	39.2	37.4
65.5°	37.2	38.2	37.2	34.8	32.8	31.0
66°	31.0	31.5	31.0	28.8	26.7	25.0



TEST NUMBER: P775821

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	15.7	15.8	15.7	13.8	12.8	10.0
68°	11.9	11.7	11.9	10.0	9.0	6.1
68.5°	8.5	9.4	8.5	7.0	5.8	2.7
69°	5.5	7.2	5.5	4.6	3.6	1.4
69.5°	3.3	5.0	3.3	2.6	1.7	0.9
70°	1.4	2.8	1.4	1.2	1.0	0.5
70.5°	0.6	0.8	0.6	0.7	0.5	0.2
71°	0.3	0.3	0.3	0.4	0.3	0.2
71.5°	0.2	0.2	0.2	0.2	0.2	0.2
72°	0.2	0.2	0.2	0.2	0.2	0.2
72.5°	0.2	0.2	0.2	0.2	0.2	0.2
73°	0.2	0.2	0.2	0.2	0.2	0.1
73.5°	0.2	0.2	0.2	0.2	0.1	0.1
74°	0.2	0.2	0.2	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	0.1
78°	0.1	0.1	0.1	0.1	0.1	0.1
78.5°	0.1	0.1	0.1	0.1	0.1	0.1
79°	0.1	0.1	0.1	0.1	0.1	0.1
79.5°	0.1	0.1	0.1	0.1	0.1	0.1
80°	0.1	0.1	0.1	0.1	0.0	0.0
80.5°	0.1	0.1	0.1	0.1	0.0	0.0
81°	0.0	0.1	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: P775821

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-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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Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

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

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21.5°	503.3	503.4	503.7	504.3	504.5	504.3	503.7	503.4	503.3	503.4	503.7
22°	503.3	503.3	503.7	504.3	504.5	504.3	503.7	503.3	503.3	503.3	503.7



44°	385.2	385.0	385.1	384.8	384.6	384.8	385.1	385.0	385.2	385.0	385.1
44.5°	378.5	378.2	378.3	378.2	377.9	378.2	378.3	378.2	378.5	378.2	378.3



66.5°	20.0	21.6	23.1	25.2	25.8	25.2	23.1	21.6	20.0	21.6	23.1
67°	15.0	16.7	18.3	20.3	20.5	20.3	18.3	16.7	15.0	16.7	18.3



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°	504.3	504.5	504.3	503.7	503.4	503.3
22°	504.3	504.5	504.3	503.7	503.3	503.3



44°	384.8	384.6	384.8	385.1	385.0	385.2
44.5°	378.2	377.9	378.2	378.3	378.2	378.5

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66.5°	25.2	25.8	25.2	23.1	21.6	20.0
67°	20.3	20.5	20.3	18.3	16.7	15.0

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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)