

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: P775664

Luminaire Tested: HCDJBL510CSD-HCD42TRMW-1000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775664
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156A001)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD42TRMW-1000lm-5000K
Description: 4 INCH ROUND NARROW MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

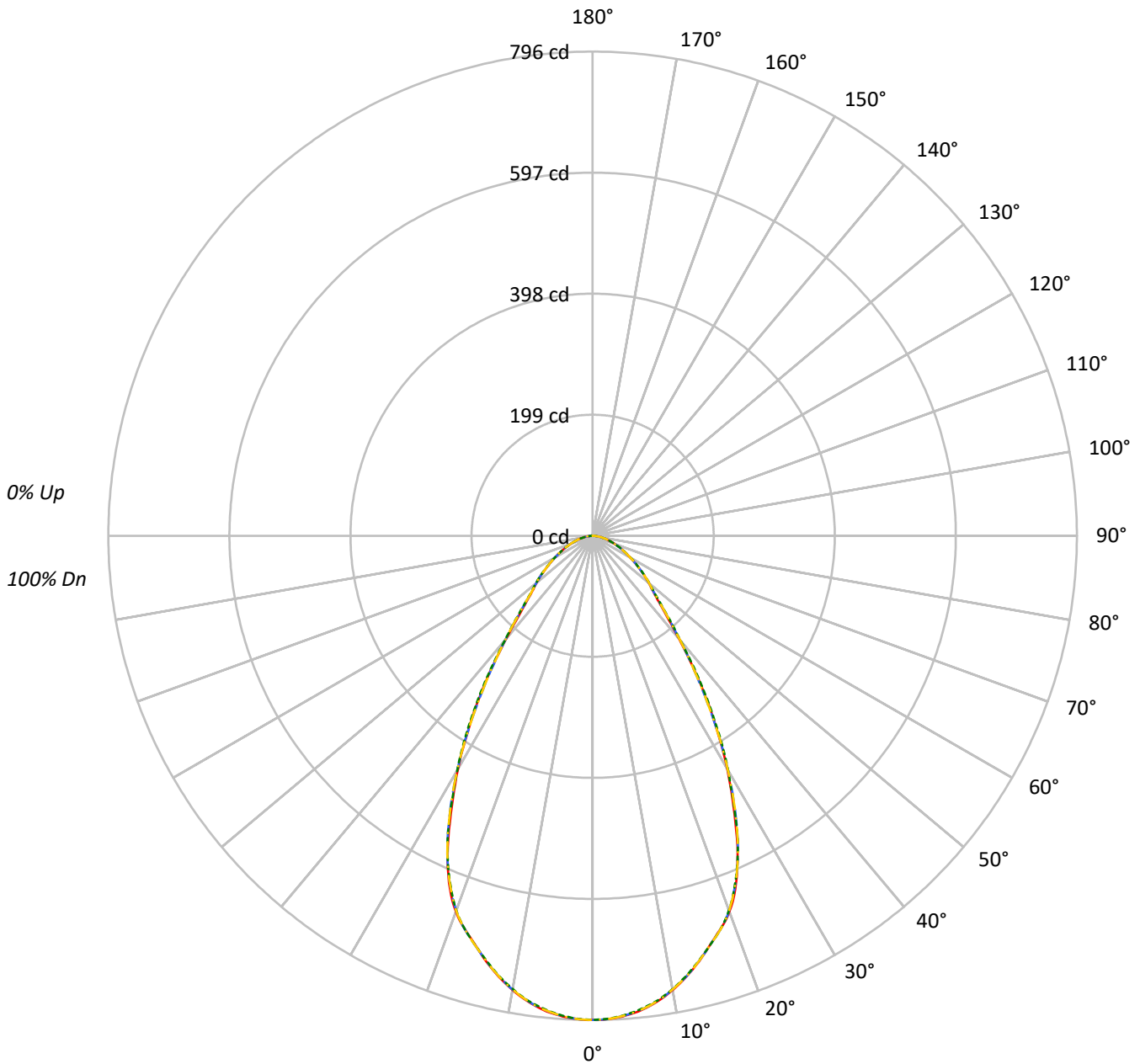
Lumens per Lamp: N/A
Luminaire Lumens: 1028.0 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Spacing Criteria (0/90/45): 0.96 / 0.97 / 0.95
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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



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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								
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89								
2	104	98	93	88	102	96	91	87	93	89	85	90	86	83	87	84	82	80								
3	97	89	83	78	95	88	82	77	85	80	76	82	78	74	80	76	73	71								
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64								
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	58								
6	80	69	62	57	78	68	61	56	67	60	56	65	60	55	64	59	55	53								
7	75	64	57	52	74	63	56	52	62	56	51	61	55	51	59	54	51	49								
8	71	60	52	48	70	59	52	47	58	52	47	57	51	47	56	51	47	45								
9	67	56	49	44	66	55	48	44	54	48	44	53	48	44	52	47	43	42								
10	63	52	45	41	62	52	45	41	51	45	41	50	44	41	49	44	40	39								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	100189	100189	100189	100189
5°	99485	99271	99485	99271
10°	96917	96700	96917	96700
15°	92623	92518	92623	92518
20°	88070	87762	88070	87762
25°	78164	78428	78164	78428
30°	64318	64652	64318	64652
35°	49900	50438	49900	50438
40°	36241	36866	36241	36866
45°	27444	28121	27444	28121
50°	23632	23827	23632	23827
55°	20537	20778	20537	20778
60°	17946	18122	17946	18122
65°	15783	15902	15783	15902
70°	13909	14019	13909	14019
75°	12253	12253	12253	12253
80°	10581	10509	10581	10509
85°	8519	8519	8519	8519

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 28121 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.2	7.2
10°-20°	199.7	19.4
20°-30°	255.7	24.9
30°-40°	202.7	19.7
40°-50°	124.1	12.1
50°-60°	84.8	8.3
60°-70°	53.1	5.2
70°-80°	26.9	2.6
80°-90°	6.8	0.7
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°	529.6	51.5
0°-40°	732.3	71.2
0°-60°	941.2	91.6
0°-90°	1028.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1028.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	796	796	796	796	796	
5°	788	786	788	786	788	74
15°	711	710	711	710	711	200
25°	563	565	563	565	563	255
35°	325	328	325	328	325	202
45°	154	158	154	158	154	123
55°	94	95	94	95	94	84
65°	53	53	53	53	53	53
75°	25	25	25	25	25	27
85°	6	6	6	6	6	7
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°	796.1	796.1	796.1	796.1	796.1	796.1	796.1	796.1	796.1	796.1	796.1
0.5°	796.2	796.1	795.9	795.8	795.5	795.8	795.9	796.1	796.2	796.1	795.9
1°	795.9	795.8	795.7	795.6	795.2	795.6	795.7	795.8	795.9	795.8	795.7
1.5°	795.5	795.3	795.3	795.1	794.7	795.1	795.3	795.3	795.5	795.3	795.3
2°	794.8	794.7	794.5	794.4	794.0	794.4	794.5	794.7	794.8	794.7	794.5
2.5°	794.1	793.9	793.7	793.6	793.0	793.6	793.7	793.9	794.1	793.9	793.7
3°	793.0	792.8	792.6	792.4	791.9	792.4	792.6	792.8	793.0	792.8	792.6
3.5°	791.9	791.6	791.3	791.1	790.8	791.1	791.3	791.6	791.9	791.6	791.3
4°	790.5	790.4	789.9	789.7	789.2	789.7	789.9	790.4	790.5	790.4	789.9
4.5°	789.0	788.8	788.3	788.1	787.5	788.1	788.3	788.8	789.0	788.8	788.3
5°	787.5	787.2	786.7	786.5	785.8	786.5	786.7	787.2	787.5	787.2	786.7
5.5°	785.9	785.1	784.6	784.4	783.8	784.4	784.6	785.1	785.9	785.1	784.6
6°	783.4	783.0	782.5	782.2	781.3	782.2	782.5	783.0	783.4	783.0	782.5
6.5°	781.0	780.7	780.0	779.7	778.8	779.7	780.0	780.7	781.0	780.7	780.0
7°	778.4	778.0	777.7	777.1	776.4	777.1	777.7	778.0	778.4	778.0	777.7
7.5°	775.5	775.1	774.7	774.5	773.7	774.5	774.7	775.1	775.5	775.1	774.7
8°	772.5	772.1	771.7	771.4	771.0	771.4	771.7	772.1	772.5	772.1	771.7
8.5°	769.3	768.8	768.4	768.1	767.7	768.1	768.4	768.8	769.3	768.8	768.4
9°	765.8	765.5	765.0	764.7	764.2	764.7	765.0	765.5	765.8	765.5	765.0
9.5°	762.1	761.9	761.4	761.0	760.6	761.0	761.4	761.9	762.1	761.9	761.4
10°	758.4	758.1	757.6	757.2	756.7	757.2	757.6	758.1	758.4	758.1	757.6
10.5°	754.2	754.0	753.5	753.2	752.7	753.2	753.5	754.0	754.2	754.0	753.5
11°	750.1	749.8	749.4	749.0	748.5	749.0	749.4	749.8	750.1	749.8	749.4
11.5°	745.7	745.5	745.1	744.6	744.2	744.6	745.1	745.5	745.7	745.5	745.1
12°	741.2	741.0	740.7	740.1	739.7	740.1	740.7	741.0	741.2	741.0	740.7
12.5°	736.5	736.3	736.0	735.5	734.9	735.5	736.0	736.3	736.5	736.3	736.0
13°	731.7	731.5	731.2	730.8	730.2	730.8	731.2	731.5	731.7	731.5	731.2
13.5°	726.7	726.5	726.3	725.9	725.4	725.9	726.3	726.5	726.7	726.5	726.3
14°	721.6	721.5	721.3	720.8	720.4	720.8	721.3	721.5	721.6	721.5	721.3
14.5°	716.3	716.2	716.1	715.6	715.2	715.6	716.1	716.2	716.3	716.2	716.1
15°	710.9	710.9	710.7	710.5	710.1	710.5	710.7	710.9	710.9	710.9	710.7
15.5°	705.4	705.4	705.6	705.4	705.2	705.4	705.6	705.4	705.4	705.4	705.6
16°	700.1	700.2	700.5	700.4	700.2	700.4	700.5	700.2	700.1	700.2	700.5
16.5°	694.7	694.9	695.4	695.4	695.3	695.4	695.4	694.9	694.7	694.9	695.4
17°	689.7	689.9	690.4	690.2	690.4	690.2	690.4	689.9	689.7	689.9	690.4
17.5°	684.8	685.0	685.3	685.2	685.1	685.2	685.3	685.0	684.8	685.0	685.3
18°	680.0	680.1	680.3	680.1	679.9	680.1	680.3	680.1	680.0	680.1	680.3
18.5°	674.9	674.9	674.9	674.7	674.4	674.7	674.9	674.9	674.9	674.9	674.9
19°	669.7	669.4	669.1	668.8	668.5	668.8	669.1	669.4	669.7	669.4	669.1
19.5°	663.9	663.5	662.8	662.6	662.3	662.6	662.8	663.5	663.9	663.5	662.8
20°	657.6	657.1	655.9	656.0	655.3	656.0	655.9	657.1	657.6	657.1	655.9
20.5°	650.7	649.8	648.5	648.9	648.0	648.9	648.5	649.8	650.7	649.8	648.5
21°	643.4	642.2	640.6	641.1	640.0	641.1	640.6	642.2	643.4	642.2	640.6



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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°	616.9	615.6	614.6	614.4	613.9	614.4	614.6	615.6	616.9	615.6	614.6
23°	606.8	605.7	605.5	604.7	604.5	604.7	605.5	605.7	606.8	605.7	605.5
23.5°	596.4	595.5	596.0	594.7	595.3	594.7	596.0	595.5	596.4	595.5	596.0
24°	585.7	584.9	586.2	584.5	585.4	584.5	586.2	584.9	585.7	584.9	586.2
24.5°	574.6	574.2	575.8	574.1	575.4	574.1	575.8	574.2	574.6	574.2	575.8
25°	562.9	563.2	565.1	563.8	564.8	563.8	565.1	563.2	562.9	563.2	565.1
25.5°	550.9	552.3	554.0	553.5	553.7	553.5	554.0	552.3	550.9	552.3	554.0
26°	538.5	541.0	542.6	542.7	541.8	542.7	542.6	541.0	538.5	541.0	542.6
26.5°	525.8	529.5	530.7	531.5	529.6	531.5	530.7	529.5	525.8	529.5	530.7
27°	513.5	517.5	518.8	520.0	517.1	520.0	518.8	517.5	513.5	517.5	518.8
27.5°	501.3	505.2	506.7	508.1	504.4	508.1	506.7	505.2	501.3	505.2	506.7
28°	489.2	492.8	494.3	495.8	491.7	495.8	494.3	492.8	489.2	492.8	494.3
28.5°	477.3	480.2	481.9	483.2	479.5	483.2	481.9	480.2	477.3	480.2	481.9
29°	465.6	467.5	469.5	470.4	467.8	470.4	469.5	467.5	465.6	467.5	469.5
29.5°	454.1	455.0	457.3	457.6	456.4	457.6	457.3	455.0	454.1	455.0	457.3
30°	442.6	442.3	444.7	444.8	444.9	444.8	444.7	442.3	442.6	442.3	444.7
30.5°	430.6	429.9	432.2	432.4	434.0	432.4	432.2	429.9	430.6	429.9	432.2
31°	418.8	417.2	419.7	420.1	422.5	420.1	419.7	417.2	418.8	417.2	419.7
31.5°	406.6	405.0	407.1	407.8	410.9	407.8	407.1	405.0	406.6	405.0	407.1
32°	394.3	392.8	394.6	395.8	399.0	395.8	394.6	392.8	394.3	392.8	394.6
32.5°	382.3	381.1	382.3	383.8	387.0	383.8	382.3	381.1	382.3	381.1	382.3
33°	370.3	369.3	369.8	371.9	374.9	371.9	369.8	369.3	370.3	369.3	369.8
33.5°	359.5	357.6	357.3	359.9	362.6	359.9	357.3	357.6	359.5	357.6	357.3
34°	347.9	345.9	344.9	348.2	351.0	348.2	344.9	345.9	347.9	345.9	344.9
34.5°	336.4	334.2	332.9	336.4	339.5	336.4	332.9	334.2	336.4	334.2	332.9
35°	324.8	322.9	321.5	325.0	328.3	325.0	321.5	322.9	324.8	322.9	321.5
35.5°	313.5	311.8	310.2	313.7	317.3	313.7	310.2	311.8	313.5	311.8	310.2
36°	302.4	300.6	299.2	302.8	306.5	302.8	299.2	300.6	302.4	300.6	299.2
36.5°	291.4	289.8	288.5	292.0	295.5	292.0	288.5	289.8	291.4	289.8	288.5
37°	280.3	279.1	278.1	281.6	284.7	281.6	278.1	279.1	280.3	279.1	278.1
37.5°	269.5	268.8	268.0	271.6	273.8	271.6	268.0	268.8	269.5	268.8	268.0
38°	258.9	258.8	258.4	261.7	263.0	261.7	258.4	258.8	258.9	258.8	258.4
38.5°	248.8	249.1	249.3	252.2	252.7	252.2	249.3	249.1	248.8	249.1	249.3
39°	239.1	239.7	240.1	242.9	242.8	242.9	240.1	239.7	239.1	239.7	240.1
39.5°	229.7	230.6	231.4	233.7	233.4	233.7	231.4	230.6	229.7	230.6	231.4
40°	220.6	221.7	222.9	224.9	224.4	224.9	222.9	221.7	220.6	221.7	222.9
40.5°	212.1	213.1	214.8	216.2	216.1	216.2	214.8	213.1	212.1	213.1	214.8
41°	203.9	204.9	207.2	208.1	208.4	208.1	207.2	204.9	203.9	204.9	207.2
41.5°	196.1	197.2	199.8	200.3	201.3	200.3	199.8	197.2	196.1	197.2	199.8
42°	188.8	190.0	192.8	193.1	194.4	193.1	192.8	190.0	188.8	190.0	192.8
42.5°	182.0	183.2	186.2	186.3	187.6	186.3	186.2	183.2	182.0	183.2	186.2
43°	175.5	176.8	179.7	179.9	181.1	179.9	179.7	176.8	175.5	176.8	179.7
43.5°	169.5	170.8	173.6	173.7	174.9	173.7	173.6	170.8	169.5	170.8	173.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	154.2	155.2	156.9	157.5	158.0	157.5	156.9	155.2	154.2	155.2	156.9
45.5°	149.7	150.5	152.1	152.7	153.1	152.7	152.1	150.5	149.7	150.5	152.1
46°	145.4	146.2	147.6	148.3	148.5	148.3	147.6	146.2	145.4	146.2	147.6
46.5°	141.5	142.1	143.2	144.0	144.3	144.0	143.2	142.1	141.5	142.1	143.2
47°	137.8	138.2	139.2	140.1	140.4	140.1	139.2	138.2	137.8	138.2	139.2
47.5°	134.2	134.6	135.5	136.5	136.9	136.5	135.5	134.6	134.2	134.6	135.5
48°	130.9	131.4	132.3	133.2	133.6	133.2	132.3	131.4	130.9	131.4	132.3
48.5°	128.3	128.5	129.2	130.1	130.4	130.1	129.2	128.5	128.3	128.5	129.2
49°	125.7	125.8	126.4	127.1	127.4	127.1	126.4	125.8	125.7	125.8	126.4
49.5°	123.3	123.4	123.8	124.3	124.4	124.3	123.8	123.4	123.3	123.4	123.8
50°	120.7	120.8	121.1	121.5	121.7	121.5	121.1	120.8	120.7	120.8	121.1
50.5°	118.1	118.2	118.5	118.9	118.9	118.9	118.5	118.2	118.1	118.2	118.5
51°	115.3	115.5	115.8	116.2	116.2	116.2	115.8	115.5	115.3	115.5	115.8
51.5°	112.5	112.6	113.0	113.5	113.7	113.5	113.0	112.6	112.5	112.6	113.0
52°	109.6	109.8	110.2	110.8	110.9	110.8	110.2	109.8	109.6	109.8	110.2
52.5°	106.7	106.9	107.5	107.9	108.1	107.9	107.5	106.9	106.7	106.9	107.5
53°	104.1	104.3	104.7	105.1	105.3	105.1	104.7	104.3	104.1	104.3	104.7
53.5°	101.3	101.5	101.9	102.5	102.7	102.5	101.9	101.5	101.3	101.5	101.9
54°	98.7	98.8	99.3	99.7	99.9	99.7	99.3	98.8	98.7	98.8	99.3
54.5°	96.2	96.3	96.7	97.1	97.3	97.1	96.7	96.3	96.2	96.3	96.7
55°	93.6	93.8	94.3	94.6	94.7	94.6	94.3	93.8	93.6	93.8	94.3
55.5°	91.2	91.4	91.8	92.1	92.2	92.1	91.8	91.4	91.2	91.4	91.8
56°	88.8	89.0	89.3	89.7	89.8	89.7	89.3	89.0	88.8	89.0	89.3
56.5°	86.5	86.7	87.0	87.3	87.4	87.3	87.0	86.7	86.5	86.7	87.0
57°	84.1	84.3	84.7	85.0	85.1	85.0	84.7	84.3	84.1	84.3	84.7
57.5°	81.8	82.1	82.4	82.6	82.8	82.6	82.4	82.1	81.8	82.1	82.4
58°	79.8	79.9	80.2	80.5	80.6	80.5	80.2	79.9	79.8	79.9	80.2
58.5°	77.6	77.7	78.0	78.3	78.4	78.3	78.0	77.7	77.6	77.7	78.0
59°	75.5	75.6	75.8	76.0	76.2	76.0	75.8	75.6	75.5	75.6	75.8
59.5°	73.4	73.5	73.7	74.0	74.1	74.0	73.7	73.5	73.4	73.5	73.7
60°	71.3	71.4	71.6	71.9	72.0	71.9	71.6	71.4	71.3	71.4	71.6
60.5°	69.3	69.4	69.6	69.8	69.9	69.8	69.6	69.4	69.3	69.4	69.6
61°	67.4	67.5	67.7	67.9	68.0	67.9	67.7	67.5	67.4	67.5	67.7
61.5°	65.5	65.6	65.8	66.0	66.1	66.0	65.8	65.6	65.5	65.6	65.8
62°	63.7	63.7	63.9	64.1	64.1	64.1	63.9	63.7	63.7	63.7	63.9
62.5°	61.7	61.8	61.9	62.2	62.3	62.2	61.9	61.8	61.7	61.8	61.9
63°	59.9	60.0	60.1	60.3	60.3	60.3	60.1	60.0	59.9	60.0	60.1
63.5°	58.1	58.2	58.3	58.5	58.6	58.5	58.3	58.2	58.1	58.2	58.3
64°	56.4	56.5	56.6	56.7	56.8	56.7	56.6	56.5	56.4	56.5	56.6
64.5°	54.7	54.8	54.9	55.0	55.1	55.0	54.9	54.8	54.7	54.8	54.9
65°	53.0	53.1	53.2	53.3	53.4	53.3	53.2	53.1	53.0	53.1	53.2
65.5°	51.4	51.4	51.5	51.7	51.7	51.7	51.5	51.4	51.4	51.4	51.5
66°	49.7	49.8	49.9	50.0	50.1	50.0	49.9	49.8	49.7	49.8	49.9



TEST NUMBER: P775664

CATALOG NUMBER: HCDJBL510CSD-HCD42TRMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	45.0	45.1	45.2	45.3	45.3	45.3	45.2	45.1	45.0	45.1	45.2
68°	43.5	43.6	43.7	43.8	43.8	43.8	43.7	43.6	43.5	43.6	43.7
68.5°	42.0	42.1	42.2	42.2	42.3	42.2	42.2	42.1	42.0	42.1	42.2
69°	40.6	40.6	40.6	40.8	40.8	40.8	40.6	40.6	40.6	40.6	40.6
69.5°	39.1	39.2	39.2	39.3	39.4	39.3	39.2	39.2	39.1	39.2	39.2
70°	37.8	38.0	37.8	38.0	38.1	38.0	37.8	38.0	37.8	38.0	37.8
70.5°	36.5	36.6	36.6	36.6	36.7	36.6	36.6	36.6	36.5	36.6	36.6
71°	35.2	35.2	35.2	35.2	35.3	35.2	35.2	35.2	35.2	35.2	35.2
71.5°	33.8	33.8	33.9	33.9	33.9	33.9	33.9	33.8	33.8	33.8	33.9
72°	32.5	32.5	32.5	32.6	32.6	32.6	32.5	32.5	32.5	32.5	32.5
72.5°	31.2	31.2	31.2	31.3	31.3	31.3	31.2	31.2	31.2	31.2	31.2
73°	30.0	30.0	30.0	30.1	30.1	30.1	30.0	30.0	30.0	30.0	30.0
73.5°	28.7	28.7	28.8	28.8	28.8	28.8	28.8	28.7	28.7	28.7	28.8
74°	27.5	27.5	27.5	27.6	27.6	27.6	27.5	27.5	27.5	27.5	27.5
74.5°	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3
75°	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2
75.5°	24.0	24.0	24.0	24.0	24.1	24.0	24.0	24.0	24.0	24.0	24.0
76°	22.9	22.8	22.8	22.9	22.9	22.9	22.8	22.8	22.9	22.8	22.8
76.5°	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8
77°	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
77.5°	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
78°	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6
78.5°	17.6	17.6	17.5	17.5	17.6	17.5	17.5	17.6	17.6	17.6	17.5
79°	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
79.5°	15.6	15.6	15.5	15.6	15.6	15.6	15.5	15.6	15.6	15.6	15.5
80°	14.6	14.6	14.5	14.5	14.5	14.5	14.5	14.6	14.6	14.6	14.5
80.5°	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
81°	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
81.5°	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7
82°	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
82.5°	10.0	10.0	10.0	10.0	9.9	10.0	10.0	10.0	10.0	10.0	10.0
83°	9.2	9.2	9.2	9.1	9.1	9.1	9.2	9.2	9.2	9.2	9.2
83.5°	8.3	8.3	8.3	8.2	8.2	8.2	8.3	8.3	8.3	8.3	8.3
84°	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
84.5°	6.7	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.7	6.6	6.6
85°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
85.5°	5.1	5.0	5.1	5.0	5.1	5.0	5.1	5.0	5.1	5.0	5.1
86°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
86.5°	3.6	3.5	3.5	3.5	3.6	3.5	3.5	3.5	3.6	3.5	3.5
87°	2.9	2.9	2.9	2.8	2.9	2.8	2.9	2.9	2.9	2.9	2.9
87.5°	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1
88°	1.4	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.4	1.5	1.5
88.5°	0.9	0.9	1.0	1.1	1.3	1.1	1.0	0.9	0.9	0.9	1.0



TEST NUMBER: P775664
CATALOG NUMBER: HCDJBL510CSD-HCD42TRMW-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	0.1	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.1



TEST NUMBER: P775664

CATALOG NUMBER: HCDJBL510CSD-HCD42TRMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	796.1	796.1	796.1	796.1	796.1	796.1
0.5°	795.8	795.5	795.8	795.9	796.1	796.2
1°	795.6	795.2	795.6	795.7	795.8	795.9
1.5°	795.1	794.7	795.1	795.3	795.3	795.5
2°	794.4	794.0	794.4	794.5	794.7	794.8
2.5°	793.6	793.0	793.6	793.7	793.9	794.1
3°	792.4	791.9	792.4	792.6	792.8	793.0
3.5°	791.1	790.8	791.1	791.3	791.6	791.9
4°	789.7	789.2	789.7	789.9	790.4	790.5
4.5°	788.1	787.5	788.1	788.3	788.8	789.0
5°	786.5	785.8	786.5	786.7	787.2	787.5
5.5°	784.4	783.8	784.4	784.6	785.1	785.9
6°	782.2	781.3	782.2	782.5	783.0	783.4
6.5°	779.7	778.8	779.7	780.0	780.7	781.0
7°	777.1	776.4	777.1	777.7	778.0	778.4
7.5°	774.5	773.7	774.5	774.7	775.1	775.5
8°	771.4	771.0	771.4	771.7	772.1	772.5
8.5°	768.1	767.7	768.1	768.4	768.8	769.3
9°	764.7	764.2	764.7	765.0	765.5	765.8
9.5°	761.0	760.6	761.0	761.4	761.9	762.1
10°	757.2	756.7	757.2	757.6	758.1	758.4
10.5°	753.2	752.7	753.2	753.5	754.0	754.2
11°	749.0	748.5	749.0	749.4	749.8	750.1
11.5°	744.6	744.2	744.6	745.1	745.5	745.7
12°	740.1	739.7	740.1	740.7	741.0	741.2
12.5°	735.5	734.9	735.5	736.0	736.3	736.5
13°	730.8	730.2	730.8	731.2	731.5	731.7
13.5°	725.9	725.4	725.9	726.3	726.5	726.7
14°	720.8	720.4	720.8	721.3	721.5	721.6
14.5°	715.6	715.2	715.6	716.1	716.2	716.3
15°	710.5	710.1	710.5	710.7	710.9	710.9
15.5°	705.4	705.2	705.4	705.6	705.4	705.4
16°	700.4	700.2	700.4	700.5	700.2	700.1
16.5°	695.4	695.3	695.4	695.4	694.9	694.7
17°	690.2	690.4	690.2	690.4	689.9	689.7
17.5°	685.2	685.1	685.2	685.3	685.0	684.8
18°	680.1	679.9	680.1	680.3	680.1	680.0
18.5°	674.7	674.4	674.7	674.9	674.9	674.9
19°	668.8	668.5	668.8	669.1	669.4	669.7
19.5°	662.6	662.3	662.6	662.8	663.5	663.9
20°	656.0	655.3	656.0	655.9	657.1	657.6
20.5°	648.9	648.0	648.9	648.5	649.8	650.7
21°	641.1	640.0	641.1	640.6	642.2	643.4



TEST NUMBER: P775664

CATALOG NUMBER: HCDJBL510CSD-HCD42TRMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	614.4	613.9	614.4	614.6	615.6	616.9
23°	604.7	604.5	604.7	605.5	605.7	606.8
23.5°	594.7	595.3	594.7	596.0	595.5	596.4
24°	584.5	585.4	584.5	586.2	584.9	585.7
24.5°	574.1	575.4	574.1	575.8	574.2	574.6
25°	563.8	564.8	563.8	565.1	563.2	562.9
25.5°	553.5	553.7	553.5	554.0	552.3	550.9
26°	542.7	541.8	542.7	542.6	541.0	538.5
26.5°	531.5	529.6	531.5	530.7	529.5	525.8
27°	520.0	517.1	520.0	518.8	517.5	513.5
27.5°	508.1	504.4	508.1	506.7	505.2	501.3
28°	495.8	491.7	495.8	494.3	492.8	489.2
28.5°	483.2	479.5	483.2	481.9	480.2	477.3
29°	470.4	467.8	470.4	469.5	467.5	465.6
29.5°	457.6	456.4	457.6	457.3	455.0	454.1
30°	444.8	444.9	444.8	444.7	442.3	442.6
30.5°	432.4	434.0	432.4	432.2	429.9	430.6
31°	420.1	422.5	420.1	419.7	417.2	418.8
31.5°	407.8	410.9	407.8	407.1	405.0	406.6
32°	395.8	399.0	395.8	394.6	392.8	394.3
32.5°	383.8	387.0	383.8	382.3	381.1	382.3
33°	371.9	374.9	371.9	369.8	369.3	370.3
33.5°	359.9	362.6	359.9	357.3	357.6	359.5
34°	348.2	351.0	348.2	344.9	345.9	347.9
34.5°	336.4	339.5	336.4	332.9	334.2	336.4
35°	325.0	328.3	325.0	321.5	322.9	324.8
35.5°	313.7	317.3	313.7	310.2	311.8	313.5
36°	302.8	306.5	302.8	299.2	300.6	302.4
36.5°	292.0	295.5	292.0	288.5	289.8	291.4
37°	281.6	284.7	281.6	278.1	279.1	280.3
37.5°	271.6	273.8	271.6	268.0	268.8	269.5
38°	261.7	263.0	261.7	258.4	258.8	258.9
38.5°	252.2	252.7	252.2	249.3	249.1	248.8
39°	242.9	242.8	242.9	240.1	239.7	239.1
39.5°	233.7	233.4	233.7	231.4	230.6	229.7
40°	224.9	224.4	224.9	222.9	221.7	220.6
40.5°	216.2	216.1	216.2	214.8	213.1	212.1
41°	208.1	208.4	208.1	207.2	204.9	203.9
41.5°	200.3	201.3	200.3	199.8	197.2	196.1
42°	193.1	194.4	193.1	192.8	190.0	188.8
42.5°	186.3	187.6	186.3	186.2	183.2	182.0
43°	179.9	181.1	179.9	179.7	176.8	175.5
43.5°	173.7	174.9	173.7	173.6	170.8	169.5



TEST NUMBER: P775664

CATALOG NUMBER: HCDJBL510CSD-HCD42TRMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	157.5	158.0	157.5	156.9	155.2	154.2
45.5°	152.7	153.1	152.7	152.1	150.5	149.7
46°	148.3	148.5	148.3	147.6	146.2	145.4
46.5°	144.0	144.3	144.0	143.2	142.1	141.5
47°	140.1	140.4	140.1	139.2	138.2	137.8
47.5°	136.5	136.9	136.5	135.5	134.6	134.2
48°	133.2	133.6	133.2	132.3	131.4	130.9
48.5°	130.1	130.4	130.1	129.2	128.5	128.3
49°	127.1	127.4	127.1	126.4	125.8	125.7
49.5°	124.3	124.4	124.3	123.8	123.4	123.3
50°	121.5	121.7	121.5	121.1	120.8	120.7
50.5°	118.9	118.9	118.9	118.5	118.2	118.1
51°	116.2	116.2	116.2	115.8	115.5	115.3
51.5°	113.5	113.7	113.5	113.0	112.6	112.5
52°	110.8	110.9	110.8	110.2	109.8	109.6
52.5°	107.9	108.1	107.9	107.5	106.9	106.7
53°	105.1	105.3	105.1	104.7	104.3	104.1
53.5°	102.5	102.7	102.5	101.9	101.5	101.3
54°	99.7	99.9	99.7	99.3	98.8	98.7
54.5°	97.1	97.3	97.1	96.7	96.3	96.2
55°	94.6	94.7	94.6	94.3	93.8	93.6
55.5°	92.1	92.2	92.1	91.8	91.4	91.2
56°	89.7	89.8	89.7	89.3	89.0	88.8
56.5°	87.3	87.4	87.3	87.0	86.7	86.5
57°	85.0	85.1	85.0	84.7	84.3	84.1
57.5°	82.6	82.8	82.6	82.4	82.1	81.8
58°	80.5	80.6	80.5	80.2	79.9	79.8
58.5°	78.3	78.4	78.3	78.0	77.7	77.6
59°	76.0	76.2	76.0	75.8	75.6	75.5
59.5°	74.0	74.1	74.0	73.7	73.5	73.4
60°	71.9	72.0	71.9	71.6	71.4	71.3
60.5°	69.8	69.9	69.8	69.6	69.4	69.3
61°	67.9	68.0	67.9	67.7	67.5	67.4
61.5°	66.0	66.1	66.0	65.8	65.6	65.5
62°	64.1	64.1	64.1	63.9	63.7	63.7
62.5°	62.2	62.3	62.2	61.9	61.8	61.7
63°	60.3	60.3	60.3	60.1	60.0	59.9
63.5°	58.5	58.6	58.5	58.3	58.2	58.1
64°	56.7	56.8	56.7	56.6	56.5	56.4
64.5°	55.0	55.1	55.0	54.9	54.8	54.7
65°	53.3	53.4	53.3	53.2	53.1	53.0
65.5°	51.7	51.7	51.7	51.5	51.4	51.4
66°	50.0	50.1	50.0	49.9	49.8	49.7



TEST NUMBER: P775664

CATALOG NUMBER: HCDJBL510CSD-HCD42TRMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	45.3	45.3	45.3	45.2	45.1	45.0
68°	43.8	43.8	43.8	43.7	43.6	43.5
68.5°	42.2	42.3	42.2	42.2	42.1	42.0
69°	40.8	40.8	40.8	40.6	40.6	40.6
69.5°	39.3	39.4	39.3	39.2	39.2	39.1
70°	38.0	38.1	38.0	37.8	38.0	37.8
70.5°	36.6	36.7	36.6	36.6	36.6	36.5
71°	35.2	35.3	35.2	35.2	35.2	35.2
71.5°	33.9	33.9	33.9	33.9	33.8	33.8
72°	32.6	32.6	32.6	32.5	32.5	32.5
72.5°	31.3	31.3	31.3	31.2	31.2	31.2
73°	30.1	30.1	30.1	30.0	30.0	30.0
73.5°	28.8	28.8	28.8	28.8	28.7	28.7
74°	27.6	27.6	27.6	27.5	27.5	27.5
74.5°	26.3	26.3	26.3	26.3	26.3	26.3
75°	25.2	25.2	25.2	25.2	25.2	25.2
75.5°	24.0	24.1	24.0	24.0	24.0	24.0
76°	22.9	22.9	22.9	22.8	22.8	22.9
76.5°	21.8	21.8	21.8	21.8	21.8	21.8
77°	20.7	20.7	20.7	20.7	20.7	20.7
77.5°	19.6	19.6	19.6	19.6	19.6	19.6
78°	18.6	18.6	18.6	18.6	18.6	18.6
78.5°	17.5	17.6	17.5	17.5	17.6	17.6
79°	16.5	16.5	16.5	16.5	16.5	16.5
79.5°	15.6	15.6	15.6	15.5	15.6	15.6
80°	14.5	14.5	14.5	14.5	14.6	14.6
80.5°	13.6	13.6	13.6	13.6	13.6	13.6
81°	12.7	12.7	12.7	12.7	12.7	12.7
81.5°	11.7	11.7	11.7	11.7	11.7	11.7
82°	10.9	10.9	10.9	10.9	10.9	10.9
82.5°	10.0	9.9	10.0	10.0	10.0	10.0
83°	9.1	9.1	9.1	9.2	9.2	9.2
83.5°	8.2	8.2	8.2	8.3	8.3	8.3
84°	7.5	7.5	7.5	7.5	7.5	7.5
84.5°	6.6	6.6	6.6	6.6	6.6	6.7
85°	5.9	5.9	5.9	5.9	5.9	5.9
85.5°	5.0	5.1	5.0	5.1	5.0	5.1
86°	4.3	4.3	4.3	4.3	4.3	4.3
86.5°	3.5	3.6	3.5	3.5	3.5	3.6
87°	2.8	2.9	2.8	2.9	2.9	2.9
87.5°	2.1	2.2	2.1	2.1	2.1	2.1
88°	1.6	1.6	1.6	1.5	1.5	1.4
88.5°	1.1	1.3	1.1	1.0	0.9	0.9



TEST NUMBER: P775664
CATALOG NUMBER: HCDJBL510CSD-HCD42TRMW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.2	0.3	0.2	0.1	0.0	0.0



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

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21.5°	635.0	634.0	632.1	632.7	631.6	632.7	632.1	634.0	635.0	634.0	632.1
22°	626.2	625.1	623.5	623.7	622.7	623.7	623.5	625.1	626.2	625.1	623.5



44°	164.0	165.3	167.7	167.9	169.0	167.9	167.7	165.3	164.0	165.3	167.7
44.5°	158.9	160.1	162.3	162.6	163.3	162.6	162.3	160.1	158.9	160.1	162.3



66.5°	48.1	48.2	48.3	48.4	48.5	48.4	48.3	48.2	48.1	48.2	48.3
67°	46.6	46.6	46.7	46.8	46.9	46.8	46.7	46.6	46.6	46.6	46.7



89°	0.3	0.4	0.6	0.7	0.9	0.7	0.6	0.4	0.3	0.4	0.6
89.5°	0.0	0.1	0.3	0.4	0.5	0.4	0.3	0.1	0.0	0.1	0.3

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21.5°	632.7	631.6	632.7	632.1	634.0	635.0
22°	623.7	622.7	623.7	623.5	625.1	626.2



44°	167.9	169.0	167.9	167.7	165.3	164.0
44.5°	162.6	163.3	162.6	162.3	160.1	158.9



66.5°	48.4	48.5	48.4	48.3	48.2	48.1
67°	46.8	46.9	46.8	46.7	46.6	46.6



89°	0.7	0.9	0.7	0.6	0.4	0.3
89.5°	0.4	0.5	0.4	0.3	0.1	0.0

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(END OF REPORT)