

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: P775621

Luminaire Tested: HCDJBL510CSD-HCD41TRH-1000lm-3000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775621
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B029)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD41TRH-1000lm-3000K
Description: 4 INCH ROUND SHALLOW-WIDE HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

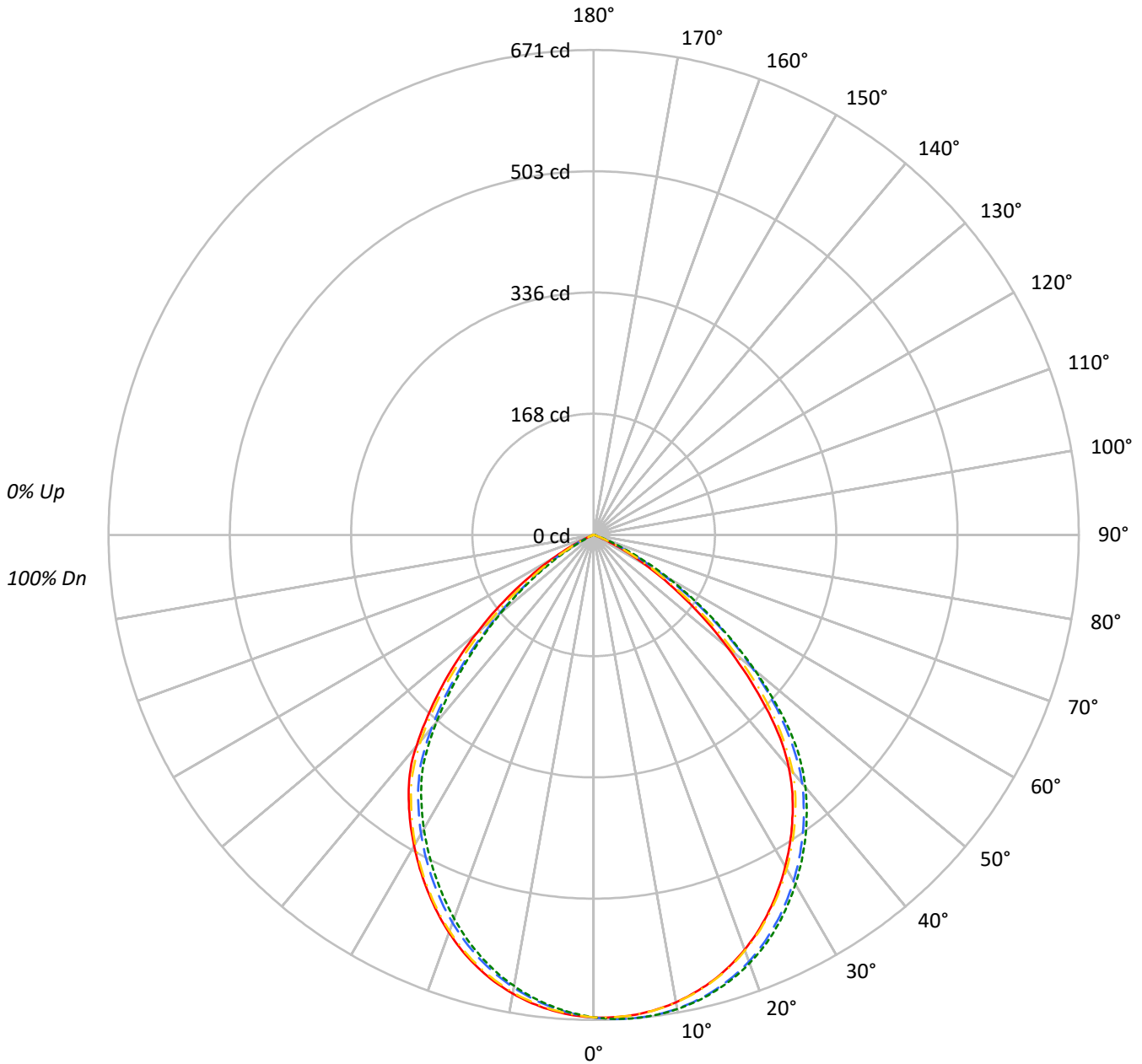
Lumens per Lamp: N/A
Luminaire Lumens: 1194.0 lumens
Efficiency: N/A
Efficacy: 119.4 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.15 / 1.22
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P775621
CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

Luminous Intensity Polar Plot





TEST NUMBER: P775621

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	105	103	109	106	104	101	102	100	98	98	97	95	95	94	92	90					90			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80					80			
3	97	89	83	77	95	87	82	77	85	80	76	82	78	74	80	76	73	71					71			
4	90	81	74	68	88	79	73	68	77	71	67	75	70	66	73	69	65	63					63			
5	84	73	66	60	82	72	65	60	70	64	60	69	63	59	67	62	58	57					57			
6	78	67	60	54	77	66	59	54	65	58	53	63	57	53	62	57	53	51					51			
7	73	62	54	49	72	61	54	49	59	53	48	58	52	48	57	52	48	46					46			
8	69	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42					42			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38					38			
10	60	49	42	37	59	48	41	37	47	41	37	46	41	36	46	40	36	35					35			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	84005	84005	84005	84005
5°	84174	84768	83441	82721
10°	83895	85147	82361	80981
15°	83151	85066	80727	78643
20°	81789	84467	78401	75615
25°	79719	83149	75470	72068
30°	77004	81117	72209	68242
35°	73606	78446	68536	63789
40°	68983	74832	62675	55578
45°	59836	68379	52842	44601
50°	47322	56915	41389	32638
55°	33987	43992	29072	20713
60°	20790	29977	16637	9942
65°	8725	16021	6224	2948
70°	1950	4710	1803	1288
75°	1361	1750	1264	827
80°	942	1305	870	580
85°	289	1155	144	144

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 68379 cd/sqm



TEST NUMBER: P775621

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.9	5.3
10°-20°	177.0	14.8
20°-30°	257.2	21.5
30°-40°	288.1	24.1
40°-50°	242.6	20.3
50°-60°	130.6	10.9
60°-70°	32.2	2.7
70°-80°	3.1	0.3
80°-90°	0.5	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°	497.0	41.6
0°-40°	785.1	65.8
0°-60°	1158.3	97.0
0°-90°	1194.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1194.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	668	668	668	668	668	
5°	666	671	660	655	666	63
15°	638	653	620	604	638	180
25°	574	599	544	519	574	264
35°	479	511	446	415	479	299
45°	336	384	297	251	336	257
55°	155	200	132	94	155	140
65°	29	54	21	10	29	33
75°	3	4	3	2	3	3
85°	0	1	0	0	0	0
90°	0	0	0	0	0	



TEST NUMBER: P775621

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	667.5	667.5	667.5	667.5	667.5	667.5	667.5	667.5	667.5	667.5	667.5
0.5°	667.9	668.3	668.5	668.3	668.1	667.7	667.5	667.3	667.3	667.3	667.1
1°	668.0	668.8	669.1	669.0	668.7	668.3	667.7	667.2	666.9	666.6	666.2
1.5°	668.1	669.1	669.7	669.6	669.3	668.7	667.9	667.1	666.4	665.8	665.3
2°	668.1	669.4	670.1	670.1	669.8	669.0	667.9	666.8	665.9	664.9	664.2
2.5°	668.0	669.6	670.6	670.6	670.3	669.2	667.9	666.4	665.1	664.0	663.0
3°	667.8	669.7	670.8	670.9	670.6	669.4	667.7	666.0	664.4	663.0	661.9
3.5°	667.5	669.7	671.0	671.2	670.8	669.4	667.5	665.5	663.5	661.8	660.6
4°	667.2	669.6	671.1	671.3	671.0	669.4	667.3	664.8	662.6	660.7	659.2
4.5°	666.8	669.4	671.1	671.4	671.1	669.3	666.9	664.1	661.6	659.4	657.7
5°	666.3	669.2	671.0	671.5	671.0	669.1	666.4	663.3	660.5	658.0	656.2
5.5°	665.7	668.9	670.8	671.4	671.0	668.8	665.9	662.5	659.2	656.6	654.6
6°	664.9	668.5	670.7	671.2	670.8	668.5	665.1	661.5	658.0	655.0	652.9
6.5°	664.1	668.0	670.3	670.9	670.5	668.0	664.4	660.5	656.6	653.4	651.1
7°	663.4	667.4	669.8	670.6	670.1	667.5	663.6	659.3	655.1	651.8	649.1
7.5°	662.4	666.8	669.3	670.1	669.6	666.9	662.8	658.1	653.6	649.9	647.2
8°	661.4	666.1	668.7	669.6	669.1	666.2	661.8	656.8	652.0	648.0	645.1
8.5°	660.2	665.1	668.1	669.0	668.5	665.5	660.7	655.4	650.1	646.0	643.0
9°	659.1	664.2	667.4	668.3	667.8	664.5	659.5	653.8	648.4	643.9	640.8
9.5°	657.8	663.2	666.5	667.6	667.1	663.6	658.3	652.3	646.5	641.9	638.5
10°	656.5	662.2	665.6	666.7	666.3	662.6	657.0	650.7	644.5	639.6	636.2
10.5°	655.0	661.0	664.5	665.8	665.3	661.5	655.6	648.8	642.4	637.3	633.6
11°	653.5	659.7	663.4	664.7	664.2	660.2	654.0	647.0	640.2	634.9	631.1
11.5°	651.9	658.3	662.3	663.6	663.1	658.9	652.5	645.0	638.0	632.4	628.5
12°	650.2	656.9	661.0	662.4	662.0	657.5	650.9	643.1	635.7	629.8	625.8
12.5°	648.4	655.4	659.5	661.1	660.7	656.1	649.0	640.9	633.2	627.3	622.9
13°	646.6	653.7	658.1	659.7	659.3	654.5	647.2	638.7	630.7	624.5	620.1
13.5°	644.5	652.0	656.5	658.2	657.8	652.9	645.2	636.5	628.1	621.6	617.1
14°	642.5	650.1	654.9	656.7	656.3	651.3	643.3	634.1	625.2	618.7	614.0
14.5°	640.3	648.3	653.2	654.9	654.6	649.4	641.2	631.6	622.5	615.6	611.0
15°	638.2	646.4	651.4	653.2	652.9	647.5	639.0	628.9	619.6	612.7	607.8
15.5°	635.9	644.2	649.4	651.4	651.1	645.6	636.7	626.3	616.6	609.3	604.3
16°	633.4	642.1	647.5	649.5	649.1	643.4	634.4	623.6	613.5	606.1	601.0
16.5°	630.9	639.8	645.3	647.5	647.2	641.3	631.9	620.6	610.2	602.8	597.5
17°	628.3	637.4	643.2	645.3	645.1	639.0	629.3	617.7	607.1	599.3	594.0
17.5°	625.5	635.0	640.9	643.1	642.9	636.7	626.7	614.7	603.6	595.7	590.2
18°	622.8	632.5	638.5	640.8	640.7	634.2	623.9	611.7	600.1	592.1	586.6
18.5°	619.9	629.8	636.1	638.3	638.3	631.8	621.2	608.4	596.6	588.3	582.7
19°	617.0	627.1	633.4	635.9	635.9	629.1	618.2	605.1	592.9	584.4	578.9
19.5°	613.9	624.2	630.8	633.2	633.3	626.5	615.2	601.7	589.2	580.6	574.8
20°	610.7	621.3	628.0	630.4	630.7	623.6	612.1	598.2	585.4	576.8	570.8
20.5°	607.5	618.3	625.0	627.7	627.9	620.8	609.0	594.6	581.6	572.6	566.8
21°	604.1	615.1	622.1	624.8	625.0	617.7	605.7	591.1	577.5	568.5	562.6



TEST NUMBER: P775621

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	593.5	605.2	612.5	615.4	616.0	608.2	595.3	579.6	565.2	555.6	549.6
23°	589.9	601.7	609.1	612.1	612.8	604.8	591.8	575.7	561.0	551.3	545.2
23.5°	586.0	598.1	605.6	608.8	609.4	601.5	588.0	571.7	556.7	546.9	540.6
24°	582.2	594.4	602.1	605.2	606.0	597.9	584.2	567.7	552.4	542.4	536.0
24.5°	578.2	590.5	598.4	601.7	602.4	594.2	580.3	563.4	548.0	537.9	531.4
25°	574.1	586.8	594.6	598.0	598.8	590.5	576.5	559.3	543.5	533.4	526.9
25.5°	570.0	582.9	590.8	594.3	595.2	586.9	572.5	555.0	539.0	528.6	522.2
26°	565.8	578.8	586.9	590.4	591.4	582.9	568.5	550.7	534.6	523.9	517.4
26.5°	561.6	574.7	583.0	586.6	587.4	578.9	564.3	546.2	529.9	519.1	512.6
27°	557.4	570.5	578.9	582.6	583.5	574.8	560.1	542.0	525.2	514.4	507.7
27.5°	552.9	566.2	574.7	578.6	579.4	570.7	555.7	537.5	520.6	509.6	502.8
28°	548.4	562.0	570.4	574.4	575.3	566.5	551.6	533.0	515.9	504.7	497.9
28.5°	543.9	557.7	566.1	570.1	571.1	562.4	547.2	528.3	511.1	499.9	492.8
29°	539.3	553.2	561.8	565.8	566.9	558.1	542.7	523.7	506.4	495.0	487.8
29.5°	534.6	548.7	557.4	561.6	562.6	553.7	538.1	519.1	501.6	489.9	482.8
30°	529.9	544.0	552.8	557.0	558.2	549.1	533.7	514.5	496.9	485.0	477.6
30.5°	525.2	539.4	548.3	552.7	553.7	544.6	529.0	509.7	491.9	480.0	472.4
31°	520.3	534.8	543.6	548.1	549.2	540.1	524.3	504.9	487.0	474.9	467.0
31.5°	515.5	529.9	539.0	543.4	544.5	535.4	519.5	500.1	482.1	469.8	461.7
32°	510.5	525.1	534.1	538.6	539.8	530.6	514.9	495.4	477.2	464.6	456.3
32.5°	505.6	520.2	529.4	534.0	535.1	525.9	510.0	490.5	472.2	459.3	450.8
33°	500.3	515.2	524.5	529.2	530.3	521.2	505.2	485.7	467.0	454.0	445.4
33.5°	495.3	510.3	519.5	524.3	525.4	516.2	500.3	480.5	461.8	448.6	439.7
34°	489.9	505.2	514.4	519.4	520.6	511.4	495.3	475.5	456.6	443.3	434.1
34.5°	484.7	499.9	509.5	514.4	515.5	506.4	490.3	470.3	451.4	437.6	428.5
35°	479.1	494.5	504.3	509.4	510.6	501.3	485.1	465.1	446.1	432.1	422.5
35.5°	474.0	489.3	499.0	504.1	505.5	496.1	479.8	459.9	440.7	426.5	416.5
36°	468.4	483.9	493.6	499.0	500.3	490.9	474.6	454.6	435.2	420.8	410.7
36.5°	462.9	478.4	488.4	493.6	494.9	485.6	469.2	449.3	429.7	414.9	404.3
37°	456.9	472.8	482.9	488.1	489.4	480.1	463.7	443.7	424.0	408.6	397.2
37.5°	451.5	467.1	477.4	482.7	484.0	474.7	458.3	438.1	418.1	401.6	389.8
38°	445.3	461.5	471.6	477.1	478.6	469.2	452.6	432.3	411.6	394.4	381.9
38.5°	439.2	455.8	466.1	471.4	473.0	463.5	446.7	426.3	404.8	386.9	373.8
39°	432.7	449.7	460.5	465.8	467.3	457.8	440.9	419.8	397.5	379.2	365.5
39.5°	426.6	443.5	454.6	460.1	461.6	451.7	434.8	412.7	389.9	371.0	357.2
40°	419.9	437.2	448.5	454.0	455.5	445.8	428.2	405.6	381.5	362.7	348.9
40.5°	412.8	430.7	442.1	447.9	449.5	439.4	421.1	397.9	373.2	354.3	340.1
41°	405.6	423.9	435.6	441.6	443.3	433.1	413.9	390.2	365.0	345.6	331.4
41.5°	398.0	416.5	428.5	434.8	436.8	426.3	406.5	382.4	356.6	337.2	322.9
42°	390.3	409.1	421.1	427.7	430.2	419.3	398.8	374.5	348.0	327.9	313.8
42.5°	382.0	401.3	413.6	420.5	423.3	411.8	391.0	366.2	339.5	319.1	305.0
43°	373.2	393.3	405.9	412.8	416.1	404.1	383.0	357.5	331.1	310.3	295.8
43.5°	364.2	385.0	398.2	405.1	408.5	396.2	374.9	349.1	322.7	301.5	287.0



TEST NUMBER: P775621

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	336.2	359.5	374.0	381.1	384.2	370.9	349.5	323.3	296.9	274.9	259.8
45.5°	326.5	350.8	365.9	372.9	375.2	362.1	340.7	314.8	288.5	266.2	250.7
46°	316.8	341.8	357.4	364.6	366.3	353.0	331.8	306.1	279.8	257.4	241.5
46.5°	307.3	332.4	349.0	356.0	357.1	344.0	322.8	297.4	271.2	248.7	232.6
47°	297.7	323.3	340.5	347.4	347.6	334.6	313.5	288.5	262.6	240.1	223.6
47.5°	288.2	314.0	331.5	338.6	338.2	325.1	304.4	279.9	254.0	231.9	214.7
48°	278.6	304.8	322.7	329.8	328.5	315.6	295.1	271.2	245.3	223.1	206.1
48.5°	269.2	295.4	313.8	320.8	319.1	306.0	285.8	262.5	236.8	214.6	197.7
49°	260.1	286.1	305.2	311.8	309.5	296.4	276.4	253.5	228.3	206.2	189.0
49.5°	250.7	276.5	296.0	302.7	300.1	286.8	267.1	245.0	219.9	198.0	180.8
50°	241.7	267.1	286.9	293.3	290.7	277.1	257.6	236.0	211.4	189.8	172.5
50.5°	232.3	257.8	277.7	283.9	281.7	267.5	248.2	227.3	203.0	181.7	164.5
51°	223.4	248.6	268.6	274.8	272.0	258.1	238.8	218.3	194.8	173.7	156.7
51.5°	214.4	239.2	259.2	265.3	262.8	249.0	229.7	209.9	186.8	165.9	149.2
52°	205.8	230.4	250.4	256.3	253.8	239.8	220.6	201.3	178.7	158.0	141.7
52.5°	196.9	221.4	241.0	246.8	245.1	230.4	211.6	192.6	170.7	150.2	134.4
53°	188.3	212.4	231.7	237.6	235.7	221.3	202.5	184.0	162.8	142.7	127.1
53.5°	179.7	203.4	222.3	228.0	226.6	212.4	193.8	175.9	155.0	135.3	120.1
54°	171.4	194.6	213.2	219.0	217.7	203.5	184.8	167.5	147.5	128.0	113.4
54.5°	163.0	186.2	204.1	209.8	209.3	194.7	176.5	159.1	139.8	120.8	106.8
55°	154.9	177.6	195.1	201.1	200.5	186.0	168.0	151.2	132.5	114.0	100.5
55.5°	146.8	169.1	186.2	191.9	191.7	177.6	159.8	143.3	125.1	107.2	94.7
56°	139.1	160.9	177.2	183.5	183.1	169.0	151.7	135.4	118.0	100.6	88.8
56.5°	131.3	152.8	168.5	174.7	174.9	160.8	143.6	127.7	110.9	94.5	82.9
57°	123.9	144.7	159.5	166.2	166.4	152.6	135.8	120.3	104.1	88.5	77.1
57.5°	116.5	136.8	151.2	157.5	158.1	144.7	128.3	113.1	97.4	82.4	71.1
58°	109.3	129.1	142.9	149.6	150.1	137.0	120.9	105.8	91.0	76.3	65.9
58.5°	102.4	121.7	134.7	141.4	142.0	129.4	113.8	99.0	84.7	70.2	60.9
59°	95.6	114.0	126.7	133.3	134.2	122.1	106.7	92.6	78.4	64.7	56.0
59.5°	89.1	106.8	118.8	125.2	126.7	114.8	99.8	86.0	72.1	59.5	51.3
60°	82.6	99.7	111.1	117.9	119.1	107.7	93.6	79.6	66.1	54.4	46.9
60.5°	76.3	92.7	103.7	110.3	111.8	100.9	87.4	73.2	60.5	49.6	42.6
61°	70.3	85.8	96.5	102.8	104.5	94.6	81.1	67.4	55.1	44.9	38.5
61.5°	64.6	79.4	89.6	95.7	97.8	88.4	74.9	61.9	49.9	40.6	34.7
62°	59.1	73.1	82.9	88.8	91.1	82.1	68.7	56.4	45.0	36.4	31.1
62.5°	53.6	67.0	76.2	82.0	84.5	75.8	63.1	51.3	40.1	32.6	27.7
63°	48.3	60.9	69.9	75.4	77.9	69.5	57.7	46.2	35.7	28.8	24.3
63.5°	43.1	55.2	63.9	68.9	71.2	63.9	52.6	41.6	31.5	25.4	21.3
64°	38.0	49.6	58.1	62.9	65.1	58.4	47.6	37.4	27.7	22.1	18.6
64.5°	33.6	44.2	52.6	57.0	59.3	53.0	43.1	33.3	24.2	19.2	15.9
65°	29.3	39.1	47.3	51.4	53.8	48.0	38.6	29.4	20.9	16.5	13.7
65.5°	25.0	34.7	42.2	46.1	48.4	43.1	34.5	25.8	17.8	14.1	12.0
66°	20.7	30.6	37.4	40.9	43.2	38.4	30.4	22.6	15.1	11.9	10.4



TEST NUMBER: P775621

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	10.7	18.6	25.6	28.4	29.5	25.9	20.3	14.1	9.9	7.9	5.5
68°	8.6	15.6	21.6	24.6	25.5	22.4	17.4	11.9	8.5	6.4	4.8
68.5°	7.0	13.0	17.8	20.7	21.8	19.1	14.7	10.6	7.0	5.1	4.4
69°	6.1	10.7	14.7	16.8	18.4	16.1	12.5	9.4	5.6	4.6	4.1
69.5°	5.6	8.9	12.0	14.0	15.3	13.5	10.9	8.1	5.2	4.3	3.8
70°	5.3	7.3	9.8	11.5	12.8	11.8	9.5	6.7	4.9	4.0	3.6
70.5°	5.0	6.1	7.9	9.4	11.2	10.2	8.1	5.5	4.6	3.8	3.4
71°	4.7	5.2	6.4	7.7	9.7	8.6	6.6	5.0	4.3	3.6	3.1
71.5°	4.4	4.8	5.4	6.3	8.2	6.9	5.2	4.7	4.0	3.3	2.9
72°	4.1	4.5	4.8	5.3	6.6	5.3	4.8	4.4	3.8	3.1	2.8
72.5°	3.9	4.2	4.4	4.8	5.1	4.8	4.5	4.1	3.5	2.9	2.6
73°	3.7	3.9	4.1	4.5	4.7	4.5	4.2	3.9	3.3	2.7	2.3
73.5°	3.4	3.7	3.9	4.2	4.4	4.2	3.9	3.6	3.1	2.6	2.2
74°	3.2	3.5	3.7	3.9	4.1	3.9	3.7	3.4	2.9	2.3	2.0
74.5°	3.0	3.2	3.4	3.7	3.9	3.7	3.4	3.2	2.7	2.1	1.9
75°	2.8	3.0	3.2	3.4	3.6	3.4	3.2	3.0	2.6	2.0	1.7
75.5°	2.6	2.8	3.0	3.2	3.4	3.2	3.0	2.8	2.3	1.9	1.6
76°	2.4	2.7	2.8	3.0	3.2	3.0	2.8	2.6	2.1	1.7	1.5
76.5°	2.2	2.4	2.6	2.8	3.0	2.8	2.6	2.3	2.0	1.6	1.4
77°	2.1	2.2	2.4	2.6	2.8	2.6	2.4	2.2	1.9	1.5	1.3
77.5°	1.9	2.1	2.2	2.4	2.6	2.4	2.2	2.0	1.7	1.4	1.2
78°	1.8	2.0	2.1	2.2	2.3	2.2	2.0	1.9	1.6	1.3	1.1
78.5°	1.7	1.8	1.9	2.1	2.2	2.1	1.9	1.7	1.5	1.2	1.0
79°	1.5	1.7	1.8	1.9	2.0	1.9	1.8	1.6	1.4	1.1	0.9
79.5°	1.4	1.6	1.7	1.8	1.9	1.8	1.6	1.5	1.3	1.0	0.9
80°	1.3	1.4	1.5	1.7	1.8	1.7	1.5	1.4	1.2	0.9	0.8
80.5°	1.2	1.3	1.4	1.6	1.6	1.6	1.4	1.3	1.1	0.8	0.7
81°	1.1	1.2	1.3	1.5	1.5	1.4	1.3	1.2	1.0	0.7	0.6
81.5°	1.0	1.1	1.2	1.4	1.4	1.3	1.2	1.1	0.9	0.6	0.6
82°	0.8	1.0	1.1	1.3	1.3	1.2	1.1	1.0	0.8	0.5	0.5
82.5°	0.7	0.9	1.1	1.2	1.2	1.2	1.0	0.9	0.6	0.4	0.5
83°	0.6	0.8	1.0	1.1	1.1	1.1	1.0	0.8	0.5	0.4	0.4
83.5°	0.4	0.7	0.9	1.0	1.0	1.0	0.9	0.7	0.4	0.3	0.4
84°	0.3	0.6	0.8	0.9	1.0	0.9	0.8	0.6	0.3	0.2	0.3
84.5°	0.2	0.5	0.7	0.8	0.9	0.8	0.7	0.5	0.2	0.2	0.2
85°	0.2	0.4	0.7	0.8	0.8	0.8	0.7	0.4	0.1	0.2	0.2
85.5°	0.1	0.4	0.6	0.7	0.7	0.7	0.6	0.4	0.1	0.1	0.1
86°	0.1	0.3	0.6	0.6	0.7	0.6	0.5	0.3	0.1	0.1	0.1
86.5°	0.1	0.3	0.5	0.6	0.6	0.6	0.5	0.3	0.1	0.1	0.0
87°	0.1	0.3	0.4	0.5	0.5	0.5	0.4	0.2	0.0	0.0	0.0
87.5°	0.0	0.2	0.4	0.4	0.5	0.4	0.3	0.2	0.0	0.0	0.0
88°	0.0	0.1	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0	0.0
88.5°	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.0



TEST NUMBER: P775621
CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-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	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1



TEST NUMBER: P775621

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	667.5	667.5	667.5	667.5	667.5	667.5
0.5°	666.7	666.4	666.4	666.8	667.2	667.9
1°	665.8	665.5	665.7	666.3	667.1	668.0
1.5°	664.7	664.4	664.7	665.7	666.9	668.1
2°	663.6	663.3	663.8	665.0	666.5	668.1
2.5°	662.5	662.2	662.8	664.2	666.1	668.0
3°	661.2	660.9	661.8	663.4	665.6	667.8
3.5°	659.7	659.5	660.6	662.5	664.9	667.5
4°	658.3	658.0	659.3	661.5	664.2	667.2
4.5°	656.8	656.5	657.9	660.4	663.5	666.8
5°	655.1	654.8	656.5	659.2	662.7	666.3
5.5°	653.4	653.1	654.9	658.0	661.7	665.7
6°	651.6	651.4	653.3	656.7	660.7	664.9
6.5°	649.7	649.5	651.6	655.2	659.5	664.1
7°	647.8	647.5	649.7	653.6	658.4	663.4
7.5°	645.8	645.5	647.9	652.0	657.1	662.4
8°	643.6	643.2	645.9	650.2	655.9	661.4
8.5°	641.4	641.1	643.8	648.5	654.4	660.2
9°	639.1	638.7	641.6	646.7	652.9	659.1
9.5°	636.8	636.3	639.3	644.6	651.2	657.8
10°	634.3	633.7	637.0	642.6	649.5	656.5
10.5°	631.8	631.2	634.5	640.6	647.8	655.0
11°	629.1	628.5	632.1	638.4	646.0	653.5
11.5°	626.4	625.8	629.4	636.1	644.0	651.9
12°	623.6	622.9	626.8	633.6	642.0	650.2
12.5°	620.6	619.8	623.9	631.1	639.7	648.4
13°	617.7	616.9	621.0	628.6	637.6	646.6
13.5°	614.6	613.7	618.0	625.9	635.3	644.5
14°	611.5	610.4	614.9	623.1	633.0	642.5
14.5°	608.2	607.2	611.7	620.2	630.4	640.3
15°	604.8	603.6	608.4	617.4	627.9	638.2
15.5°	601.5	600.0	604.9	614.3	625.1	635.9
16°	597.9	596.5	601.6	611.2	622.4	633.4
16.5°	594.2	592.8	597.9	608.0	619.6	630.9
17°	590.5	589.0	594.3	604.7	616.8	628.3
17.5°	586.8	585.1	590.5	601.4	613.6	625.5
18°	583.0	581.2	586.8	597.8	610.5	622.8
18.5°	579.0	577.1	582.8	594.2	607.3	619.9
19°	575.0	573.0	578.8	590.5	604.0	617.0
19.5°	570.8	568.9	574.8	586.9	600.6	613.9
20°	566.7	564.6	570.7	583.0	597.2	610.7
20.5°	562.5	560.2	566.6	579.1	593.6	607.5
21°	558.2	555.8	562.2	575.1	589.9	604.1

TEST NUMBER: P775621

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	544.9	542.4	549.2	562.8	578.6	593.5
23°	540.3	537.8	544.6	558.6	574.6	589.9
23.5°	535.8	533.2	540.2	554.3	570.6	586.0
24°	531.1	528.5	535.6	549.8	566.5	582.2
24.5°	526.4	523.8	531.0	545.4	562.4	578.2
25°	521.7	519.0	526.2	540.9	558.1	574.1
25.5°	516.9	514.2	521.6	536.4	553.8	570.0
26°	512.1	509.5	516.9	531.9	549.5	565.8
26.5°	507.2	504.6	512.2	527.3	545.1	561.6
27°	502.3	499.8	507.4	522.6	540.6	557.4
27.5°	497.4	494.8	502.6	517.9	536.1	552.9
28°	492.4	489.8	497.7	513.1	531.4	548.4
28.5°	487.3	484.8	492.7	508.3	526.9	543.9
29°	482.4	479.9	487.9	503.4	522.1	539.3
29.5°	477.2	474.8	482.9	498.5	517.4	534.6
30°	472.0	469.6	477.9	493.6	512.6	529.9
30.5°	466.7	464.4	472.8	488.5	507.6	525.2
31°	461.4	459.2	467.5	483.5	502.6	520.3
31.5°	456.1	453.9	462.2	478.3	497.7	515.5
32°	450.6	448.6	457.0	473.1	492.6	510.5
32.5°	445.3	443.2	451.7	467.8	487.5	505.6
33°	439.8	437.6	446.3	462.6	482.0	500.3
33.5°	434.3	432.3	441.0	457.1	476.7	495.3
34°	428.7	426.7	435.6	451.7	471.4	489.9
34.5°	423.0	421.0	429.9	446.1	465.8	484.7
35°	417.0	415.2	424.2	440.7	460.4	479.1
35.5°	411.2	409.3	418.5	435.0	454.8	474.0
36°	405.2	402.8	412.5	429.3	449.2	468.4
36.5°	398.4	396.1	406.1	423.1	443.5	462.9
37°	391.0	388.7	399.0	416.9	437.3	456.9
37.5°	383.5	380.7	391.5	410.1	431.1	451.5
38°	375.4	372.5	383.6	402.8	424.8	445.3
38.5°	367.2	364.2	375.4	395.3	418.3	439.2
39°	358.9	355.8	367.1	387.6	411.3	432.7
39.5°	350.3	347.2	358.7	379.9	404.0	426.6
40°	341.4	338.3	350.3	371.7	396.1	419.9
40.5°	332.8	329.5	341.6	363.4	388.4	412.8
41°	323.7	320.7	333.2	355.1	380.3	405.6
41.5°	314.9	311.9	324.6	346.4	372.1	398.0
42°	305.8	303.2	316.0	337.7	363.9	390.3
42.5°	296.9	294.4	307.4	329.1	355.1	382.0
43°	287.6	285.5	298.9	320.1	346.3	373.2
43.5°	278.7	276.8	290.3	311.0	337.2	364.2



TEST NUMBER: P775621

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	251.9	250.6	263.9	283.9	309.6	336.2
45.5°	243.0	241.9	255.2	274.6	300.2	326.5
46°	234.2	233.2	246.1	265.9	290.7	316.8
46.5°	225.7	224.5	237.0	256.7	280.9	307.3
47°	216.8	216.0	228.4	247.6	271.3	297.7
47.5°	208.3	207.5	219.4	238.3	261.7	288.2
48°	200.0	199.1	211.0	229.5	252.2	278.6
48.5°	191.7	190.9	202.3	220.3	242.5	269.2
49°	183.4	182.8	193.7	211.6	233.2	260.1
49.5°	175.1	174.6	185.4	202.6	223.9	250.7
50°	167.2	166.7	177.1	193.8	214.5	241.7
50.5°	159.2	158.7	168.8	184.5	205.4	232.3
51°	151.6	151.1	160.5	176.5	196.5	223.4
51.5°	144.1	143.5	152.7	167.8	187.7	214.4
52°	136.5	136.1	144.8	159.4	179.1	205.8
52.5°	129.2	128.8	137.2	150.6	170.5	196.9
53°	122.1	121.6	129.5	143.0	162.2	188.3
53.5°	115.1	114.5	122.0	135.0	154.1	179.7
54°	108.4	107.7	114.6	127.0	146.1	171.4
54.5°	101.8	101.0	107.7	119.4	138.4	163.0
55°	95.8	94.4	100.7	112.1	130.7	154.9
55.5°	89.8	88.1	93.8	104.9	123.3	146.8
56°	83.9	81.8	87.3	98.0	116.0	139.1
56.5°	77.9	75.7	80.8	91.1	109.1	131.3
57°	71.9	69.9	74.7	84.6	102.2	123.9
57.5°	66.5	64.2	68.7	78.5	95.4	116.5
58°	61.4	58.8	62.9	72.5	88.9	109.3
58.5°	56.4	53.6	57.5	66.7	82.7	102.4
59°	51.8	48.7	52.2	61.1	76.5	95.6
59.5°	47.2	44.0	47.3	55.9	70.6	89.1
60°	42.8	39.5	42.6	51.0	64.9	82.6
60.5°	38.6	35.3	38.1	46.1	59.4	76.3
61°	34.8	31.7	34.4	41.5	54.1	70.3
61.5°	30.9	28.2	30.8	37.4	49.1	64.6
62°	27.5	24.7	27.3	33.9	44.4	59.1
62.5°	24.3	21.1	23.7	30.3	39.7	53.6
63°	21.3	18.3	20.1	26.8	35.3	48.3
63.5°	18.4	15.8	17.4	23.4	31.6	43.1
64°	15.8	13.5	14.9	19.9	28.1	38.0
64.5°	13.5	11.6	12.9	17.1	24.5	33.6
65°	12.0	9.9	11.0	14.7	20.9	29.3
65.5°	10.6	8.5	9.5	12.5	18.0	25.0
66°	9.2	7.1	8.1	10.5	15.2	20.7



TEST NUMBER: P775621

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	5.0	4.8	5.2	6.2	8.9	10.7
68°	4.5	4.5	4.7	5.4	7.5	8.6
68.5°	4.2	4.2	4.4	4.8	6.2	7.0
69°	4.0	3.9	4.1	4.5	5.4	6.1
69.5°	3.7	3.7	3.9	4.2	4.9	5.6
70°	3.5	3.5	3.7	4.0	4.6	5.3
70.5°	3.3	3.3	3.4	3.7	4.3	5.0
71°	3.0	3.0	3.2	3.5	4.0	4.7
71.5°	2.8	2.8	3.0	3.3	3.8	4.4
72°	2.7	2.7	2.8	3.1	3.6	4.1
72.5°	2.4	2.4	2.6	2.9	3.3	3.9
73°	2.2	2.2	2.3	2.7	3.1	3.7
73.5°	2.1	2.1	2.2	2.4	2.9	3.4
74°	1.9	1.9	2.0	2.2	2.7	3.2
74.5°	1.8	1.8	1.9	2.1	2.4	3.0
75°	1.7	1.7	1.8	2.0	2.3	2.8
75.5°	1.6	1.6	1.7	1.8	2.1	2.6
76°	1.5	1.5	1.5	1.7	2.0	2.4
76.5°	1.4	1.4	1.4	1.6	1.8	2.2
77°	1.3	1.3	1.3	1.5	1.7	2.1
77.5°	1.2	1.2	1.2	1.4	1.6	1.9
78°	1.1	1.1	1.2	1.3	1.5	1.8
78.5°	1.0	1.0	1.1	1.2	1.3	1.7
79°	0.9	0.9	1.0	1.1	1.2	1.5
79.5°	0.9	0.9	0.9	1.0	1.1	1.4
80°	0.8	0.8	0.8	0.9	1.0	1.3
80.5°	0.7	0.7	0.8	0.8	0.9	1.2
81°	0.7	0.7	0.7	0.7	0.8	1.1
81.5°	0.6	0.6	0.6	0.7	0.7	1.0
82°	0.5	0.5	0.6	0.6	0.6	0.8
82.5°	0.5	0.5	0.5	0.5	0.5	0.7
83°	0.4	0.4	0.4	0.5	0.4	0.6
83.5°	0.4	0.3	0.4	0.4	0.4	0.4
84°	0.3	0.3	0.3	0.4	0.3	0.3
84.5°	0.2	0.2	0.2	0.3	0.3	0.2
85°	0.2	0.1	0.2	0.2	0.2	0.2
85.5°	0.1	0.1	0.1	0.2	0.2	0.1
86°	0.0	0.0	0.0	0.1	0.1	0.1
86.5°	0.0	0.0	0.0	0.0	0.1	0.1
87°	0.0	0.0	0.0	0.0	0.0	0.1
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.1	0.0	0.0	0.0	0.0
88.5°	0.1	0.1	0.1	0.0	0.0	0.0



TEST NUMBER: P775621
CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

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

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





21.5°	600.6	612.0	619.0	621.7	622.2	614.6	602.3	587.3	573.5	564.2	558.3
22°	597.2	608.6	615.9	618.6	619.0	611.5	598.8	583.4	569.4	560.0	554.0



44°	355.0	376.6	390.3	397.2	400.6	387.9	366.6	340.7	314.0	292.4	277.7
44.5°	345.8	368.1	382.2	389.2	392.6	379.5	358.0	332.1	305.5	283.7	268.6



66.5°	16.4	26.6	33.5	36.1	38.4	34.0	26.7	19.4	12.8	10.5	8.8
67°	13.3	22.6	29.5	32.3	33.8	29.8	23.4	16.5	11.3	9.2	7.1



89°	0.0	0.0	0.2	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.1
89.5°	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.1

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





21.5°	553.7	551.4	557.9	571.1	586.3	600.6
22°	549.3	546.9	553.6	567.0	582.4	597.2



44°	269.8	268.1	281.5	302.0	328.2	355.0
44.5°	260.9	259.2	272.5	292.7	319.2	345.8

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



66.5°	7.9	6.2	6.8	8.8	12.9	16.4
67°	6.4	5.3	5.9	7.3	10.7	13.3

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



89°	0.1	0.1	0.0	0.1	0.0	0.0
89.5°	0.1	0.0	0.0	0.1	0.0	0.0

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)