

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: P775671

Luminaire Tested: HCDJBS510CSD-HCD4TRH-1000lm-3000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P775671
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD4TRH-1000lm-3000K
Description: 4 INCH ROUND MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

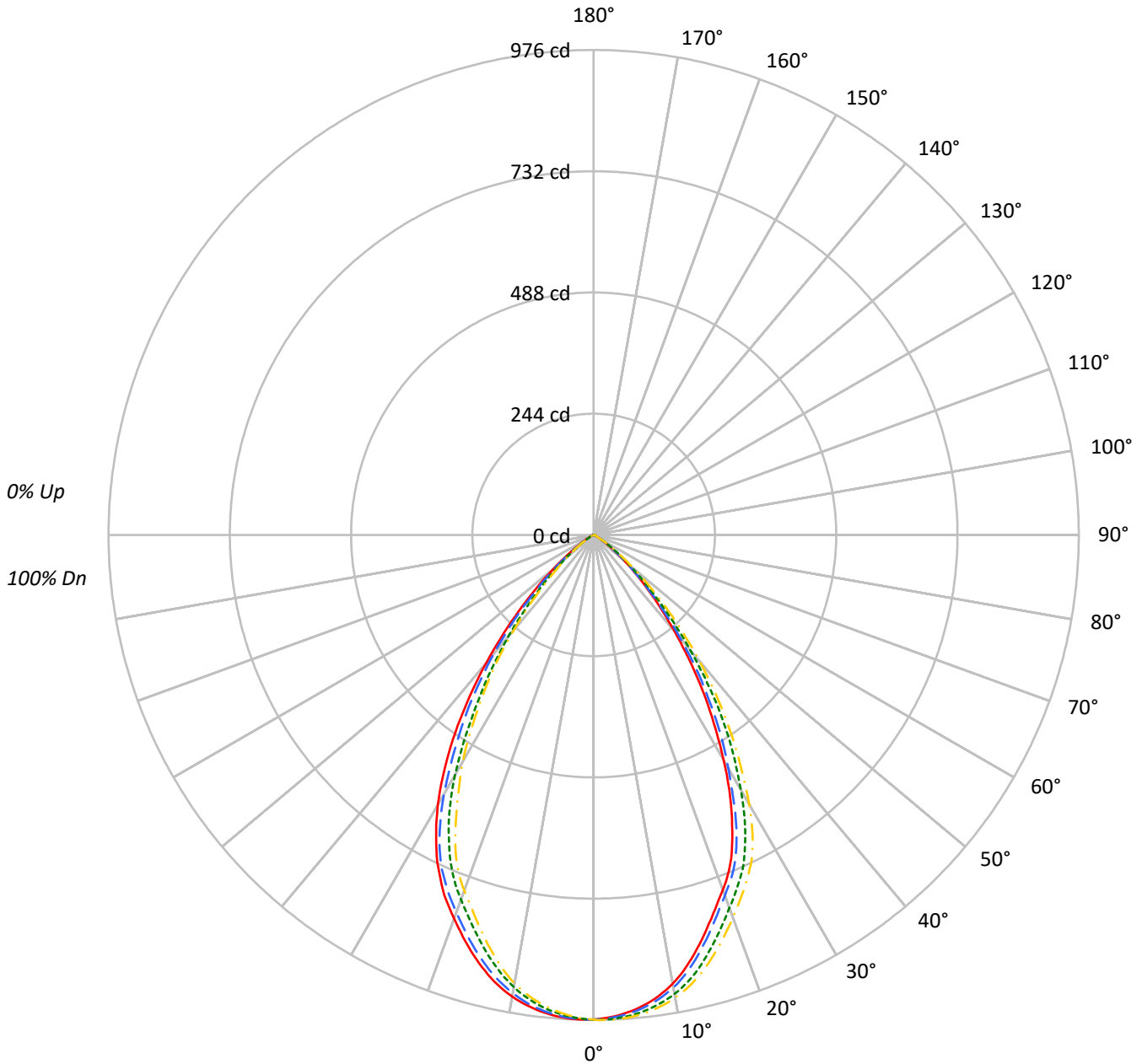
Lumens per Lamp: N/A
Luminaire Lumens: 1099.2 lumens
Efficiency: N/A
Efficacy: 109.9 lumens/watt
Spacing Criteria (0/90/45): 0.98 / 0.98 / 0.98
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P775671
CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-1000lm-3000K

Luminous Intensity Polar Plot





TEST NUMBER: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-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	113	110	107	105	111	108	105	103	104	102	100	100	99	97	97	95	94	92					92			
2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	91	88	86	85					85			
3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78					78			
4	95	87	81	76	93	85	80	75	83	78	75	81	77	74	79	76	73	71					71			
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65					65			
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60					60			
7	80	70	63	58	78	69	63	58	68	62	58	66	61	58	65	61	57	56					56			
8	75	65	58	54	74	64	58	54	63	58	54	62	57	53	61	57	53	52					52			
9	71	61	54	50	70	60	54	50	59	54	50	58	53	50	58	53	49	48					48			
10	68	57	51	47	67	57	51	47	56	50	46	55	50	46	54	50	46	45					45			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	122766	122766	122766	122766
5°	121113	122275	122515	121530
10°	117159	119843	120571	118117
15°	109717	114303	116179	111801
20°	101771	106967	110021	104583
25°	91689	99576	102687	95605
30°	76060	86145	91057	80972
35°	58519	69335	74574	61792
40°	41531	49696	55216	43848
45°	26928	31840	36130	27373
50°	15565	18521	20166	14919
55°	7657	9347	9457	6868
60°	3222	3650	3750	2668
65°	1668	1727	1787	1400
70°	993	1030	1104	810
75°	583	632	632	486
80°	290	435	362	290
85°	144	289	144	144

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 36948 cd/sqm



TEST NUMBER: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-1000lm-3000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	91.0	8.3
10°-20°	243.0	22.1
20°-30°	318.5	29.0
30°-40°	266.7	24.3
40°-50°	135.2	12.3
50°-60°	37.0	3.4
60°-70°	6.2	0.6
70°-80°	1.4	0.1
80°-90°	0.2	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°	652.5	59.4
0°-40°	919.2	83.6
0°-60°	1091.4	99.3
0°-90°	1099.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1099.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	976	976	976	976	976	
5°	959	968	970	962	959	90
15°	842	877	892	858	842	236
25°	660	717	740	688	660	299
35°	381	451	485	402	381	237
45°	151	179	203	154	151	119
55°	35	43	43	31	35	34
65°	6	6	6	5	6	6
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



TEST NUMBER: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-1000lm-3000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	975.5	975.5	975.5	975.5	975.5	975.5	975.5	975.5	975.5	975.5	975.5
0.5°	974.4	974.5	974.9	975.6	975.9	976.2	976.3	976.2	975.4	975.2	975.3
1°	973.6	973.7	974.4	975.2	975.9	976.3	976.5	976.4	975.7	975.3	975.3
1.5°	972.4	972.8	973.7	974.7	975.7	976.3	976.5	976.5	975.6	975.2	974.8
2°	971.2	971.8	972.6	974.0	975.2	976.0	976.5	976.4	975.4	974.8	974.5
2.5°	969.7	970.4	971.6	973.0	974.6	975.7	976.2	976.0	975.0	974.2	973.8
3°	967.9	968.9	970.1	971.8	973.6	974.9	975.6	975.6	974.3	973.5	972.8
3.5°	965.9	967.0	968.6	970.2	972.5	974.1	974.8	974.7	973.6	972.5	971.7
4°	963.8	965.0	966.5	968.5	971.3	973.0	974.0	973.8	972.5	971.4	970.5
4.5°	961.4	962.6	964.5	966.6	969.8	971.7	973.0	972.7	971.1	970.0	968.9
5°	958.7	960.3	962.0	964.3	967.9	970.3	971.5	971.3	969.8	968.5	967.2
5.5°	955.8	957.3	959.5	961.9	966.0	968.6	970.0	969.7	968.1	966.6	965.2
6°	952.4	954.3	956.8	959.4	963.7	966.6	968.3	968.1	966.2	964.7	963.2
6.5°	949.2	951.3	953.8	956.7	961.3	964.6	966.4	966.0	964.2	962.3	960.6
7°	945.4	947.6	950.5	953.8	958.7	962.2	964.2	964.0	961.8	960.0	957.9
7.5°	941.4	943.7	946.9	950.5	955.8	959.7	961.6	961.4	959.4	957.2	955.0
8°	937.1	939.7	943.1	947.0	952.7	956.8	958.9	958.5	956.7	954.4	951.8
8.5°	932.5	935.2	939.0	943.1	949.4	953.7	956.0	955.8	953.7	951.2	948.4
9°	927.5	930.4	934.4	939.1	945.9	950.4	952.7	952.5	950.5	947.8	944.7
9.5°	922.4	925.4	929.7	934.7	941.9	946.7	949.4	949.2	947.2	944.3	940.7
10°	916.8	920.1	924.7	930.0	937.8	942.8	945.4	945.5	943.5	940.5	936.5
10.5°	910.7	914.2	919.5	924.9	933.2	938.5	941.4	941.7	939.6	936.2	932.2
11°	904.6	908.1	913.4	919.6	928.4	934.0	937.2	937.3	935.3	931.9	927.4
11.5°	897.6	901.7	907.2	913.7	923.4	929.3	932.6	932.9	930.9	927.2	922.3
12°	890.4	894.6	900.5	907.6	918.0	924.0	927.6	928.1	926.2	922.3	917.2
12.5°	882.9	887.2	893.4	900.9	911.9	918.4	922.7	923.3	921.2	917.1	911.7
13°	875.3	879.8	886.1	894.3	905.7	912.8	917.0	917.8	915.8	911.5	905.9
13.5°	867.2	871.7	878.6	886.7	899.2	906.4	911.4	912.3	910.2	905.8	900.0
14°	858.8	863.7	870.6	879.1	892.2	900.1	905.2	906.2	904.2	899.9	893.4
14.5°	850.6	855.2	862.3	871.2	884.9	893.3	898.7	900.3	898.2	893.6	887.1
15°	842.1	847.0	854.0	863.4	877.3	886.4	892.2	893.5	891.7	887.0	880.5
15.5°	833.5	838.5	845.7	855.3	869.9	879.1	885.6	887.2	885.2	880.6	873.7
16°	825.2	830.0	837.5	847.0	862.1	872.0	878.7	880.5	878.6	873.7	866.8
16.5°	816.5	821.6	829.0	839.0	854.4	864.7	871.4	873.9	871.9	867.0	859.7
17°	808.2	813.0	820.7	830.6	846.3	857.2	864.1	866.8	864.9	860.1	852.3
17.5°	799.6	804.6	812.1	822.4	838.2	849.3	856.9	859.4	857.8	852.7	845.2
18°	791.3	796.4	803.9	814.2	830.4	841.8	849.3	852.1	850.6	845.6	837.5
18.5°	782.8	787.9	795.4	805.9	822.3	834.0	841.9	845.2	843.1	838.3	829.9
19°	775.0	779.9	787.4	797.8	814.3	826.1	834.3	837.2	835.9	831.0	822.6
19.5°	767.2	772.1	779.6	789.8	806.7	818.4	826.8	829.8	828.6	823.7	815.5
20°	759.9	764.5	771.9	782.2	798.7	810.7	819.0	822.7	821.5	816.6	808.1
20.5°	752.2	757.0	764.3	774.4	791.2	802.9	811.7	815.4	814.2	809.4	800.8
21°	744.6	749.3	756.9	766.8	783.6	795.4	804.1	807.7	807.0	802.2	793.5



TEST NUMBER: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	717.5	724.1	733.0	743.9	760.4	772.9	782.0	786.1	784.7	779.4	770.3
23°	707.6	714.1	723.7	735.5	752.7	764.6	774.5	778.3	776.7	770.3	762.2
23.5°	696.5	703.2	713.8	726.0	744.8	756.5	766.6	769.9	767.4	761.4	754.0
24°	684.8	691.9	703.0	715.9	737.0	748.2	758.5	761.6	758.1	752.3	745.7
24.5°	672.5	679.7	691.6	705.2	727.3	740.0	750.5	753.3	748.8	743.2	737.6
25°	660.3	667.4	679.9	693.5	717.1	731.9	742.6	744.9	739.5	734.1	727.5
25.5°	647.1	654.6	667.4	681.2	706.3	722.0	734.5	736.6	730.2	724.0	717.2
26°	634.4	642.4	654.6	667.9	694.9	711.5	725.0	726.2	719.6	712.7	706.3
26.5°	621.0	629.7	640.9	654.0	683.4	700.7	714.9	716.1	708.9	701.5	694.9
27°	607.9	616.7	626.9	639.9	671.4	689.3	704.3	704.6	697.7	690.4	683.1
27.5°	594.3	603.4	612.0	626.1	659.4	678.1	693.2	693.5	686.3	679.2	670.6
28°	580.8	590.1	597.7	612.6	646.7	666.3	680.9	681.2	674.9	667.7	657.9
28.5°	566.6	576.5	583.3	599.3	633.3	654.4	668.1	669.1	663.7	656.0	644.7
29°	552.5	562.6	568.9	586.2	619.9	641.9	654.9	656.2	651.6	643.9	631.1
29.5°	538.1	548.1	555.3	573.5	606.1	629.2	640.7	643.2	639.4	631.5	617.0
30°	523.4	533.2	541.8	560.6	592.8	615.9	625.9	629.2	626.6	618.5	602.0
30.5°	508.3	518.4	528.3	547.9	577.7	601.8	610.4	615.1	613.8	605.3	587.0
31°	493.6	503.6	515.0	534.2	563.5	587.3	595.5	600.5	600.2	592.0	572.0
31.5°	479.0	488.6	501.6	520.9	549.5	572.0	579.7	585.6	586.5	577.8	556.6
32°	464.5	473.9	488.0	506.5	536.3	557.0	564.4	570.4	572.4	563.5	541.7
32.5°	450.8	459.2	474.2	492.3	521.8	542.0	549.2	555.6	558.7	549.2	526.8
33°	437.0	445.2	460.5	477.5	507.8	526.4	534.6	540.7	544.2	535.3	512.0
33.5°	422.9	431.3	446.5	462.5	494.0	510.7	519.9	525.8	530.1	520.5	497.6
34°	409.1	417.1	432.0	447.3	480.6	494.3	505.4	511.1	515.2	505.3	483.3
34.5°	395.1	402.7	417.5	432.9	465.7	478.1	491.0	496.7	500.6	490.7	469.2
35°	380.9	388.1	403.3	418.7	451.3	461.9	476.3	482.5	485.4	475.6	454.9
35.5°	367.9	374.4	389.3	405.0	436.4	446.3	461.8	468.4	470.7	459.9	440.8
36°	354.6	361.0	375.5	391.7	422.3	430.7	447.2	454.0	455.0	444.6	426.8
36.5°	341.1	347.8	366.0	378.2	406.1	415.6	432.6	440.0	439.7	429.1	412.4
37°	327.8	334.4	351.9	362.8	391.1	400.6	417.6	425.4	424.2	414.0	397.8
37.5°	314.4	321.1	338.0	349.9	375.6	386.2	402.5	411.0	409.5	398.9	383.2
38°	301.0	307.8	324.0	336.9	360.9	372.3	387.6	396.4	394.4	384.0	368.4
38.5°	288.5	295.6	309.9	324.1	345.4	358.0	373.0	381.9	379.6	369.3	354.0
39°	276.4	283.6	296.9	311.2	331.0	344.2	358.5	367.3	365.2	355.0	339.9
39.5°	264.5	271.2	284.0	297.4	316.2	330.1	344.3	353.1	350.8	340.6	326.1
40°	252.8	259.0	271.1	283.7	302.5	316.7	330.1	338.7	336.1	326.5	312.1
40.5°	241.2	247.5	258.7	270.4	288.1	302.8	316.4	324.6	321.9	312.4	299.3
41°	230.1	236.0	246.1	257.3	275.0	289.7	303.2	311.2	307.7	297.9	285.7
41.5°	219.3	225.4	233.9	244.8	261.7	276.4	289.8	297.6	293.8	284.2	272.7
42°	208.8	214.7	222.2	232.5	249.1	263.8	276.8	284.4	279.7	270.7	259.7
42.5°	198.3	204.2	210.9	220.6	236.6	250.9	264.1	270.9	266.2	257.4	246.9
43°	188.3	194.0	199.6	208.7	224.5	238.5	251.4	258.0	252.9	244.8	234.3
43.5°	178.6	184.3	188.9	196.9	212.3	226.4	239.1	245.5	239.9	231.7	221.8



TEST NUMBER: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	151.3	156.6	159.0	163.4	178.9	192.3	203.8	207.6	203.0	195.8	185.7
45.5°	142.9	148.0	149.7	153.2	168.8	181.3	192.7	195.5	191.5	184.5	174.3
46°	134.6	139.7	140.8	143.0	158.8	171.0	182.2	184.0	180.4	173.3	163.5
46.5°	126.8	131.8	132.0	133.5	149.3	161.0	171.4	172.3	169.4	162.4	153.0
47°	118.9	123.8	123.8	124.7	140.2	151.2	161.0	161.5	158.7	152.4	142.7
47.5°	111.9	116.4	116.0	116.4	131.5	141.8	150.8	150.9	148.4	142.6	133.1
48°	104.8	109.3	108.5	108.6	123.1	132.9	141.2	140.9	138.5	132.4	123.9
48.5°	98.1	102.5	101.6	101.7	115.2	124.4	131.6	131.1	129.0	123.2	115.1
49°	91.6	95.8	94.7	95.1	107.8	116.2	122.4	121.9	119.9	114.5	106.7
49.5°	85.4	89.5	88.5	88.9	100.6	108.4	113.7	113.3	111.1	106.1	99.5
50°	79.5	83.4	82.7	83.3	94.6	101.1	105.3	105.1	103.0	99.0	92.5
50.5°	73.9	77.6	77.2	77.9	88.5	94.6	98.3	98.1	96.0	92.0	85.4
51°	68.5	72.0	72.0	72.9	82.5	88.2	91.3	91.0	89.0	84.8	78.4
51.5°	63.3	66.7	66.9	68.0	76.3	81.9	84.2	84.1	82.0	77.8	71.3
52°	58.5	61.7	62.1	63.4	70.3	75.4	77.2	77.1	74.9	70.7	65.3
52.5°	53.8	56.9	57.5	58.8	65.1	69.0	70.1	70.1	68.0	64.4	59.7
53°	49.4	52.2	53.0	54.4	60.0	63.6	64.4	64.3	62.3	58.9	54.6
53.5°	45.2	47.8	48.8	50.2	55.4	58.4	59.1	58.7	57.0	53.8	49.7
54°	41.3	43.7	44.8	46.1	50.9	53.3	54.1	53.6	52.0	49.1	45.3
54.5°	38.0	40.0	41.0	42.4	46.5	48.6	49.3	48.8	47.2	44.5	41.1
55°	34.9	36.5	37.6	38.8	42.6	44.3	44.8	44.5	43.1	40.5	37.7
55.5°	31.9	33.6	34.5	35.7	38.8	40.2	40.7	40.5	39.2	37.1	34.3
56°	28.9	30.6	31.4	32.6	35.3	36.5	37.1	36.8	35.7	33.8	30.8
56.5°	25.8	27.7	28.4	29.4	32.1	33.2	33.7	33.4	32.4	30.2	27.6
57°	22.8	24.6	25.3	26.2	28.7	29.8	30.3	29.9	29.1	27.2	24.6
57.5°	20.5	21.6	22.3	23.1	25.5	26.5	26.9	26.8	25.9	24.2	21.9
58°	18.6	19.5	20.0	20.6	22.8	23.6	24.0	23.9	23.2	21.6	19.6
58.5°	16.8	17.7	18.0	18.4	20.3	21.0	21.3	21.3	20.7	19.4	17.6
59°	15.3	16.0	16.2	16.5	18.1	18.6	19.0	19.0	18.5	17.5	15.8
59.5°	14.0	14.6	14.6	14.9	16.1	16.6	16.9	16.9	16.5	15.6	14.2
60°	12.8	13.3	13.4	13.5	14.5	14.9	15.1	15.2	14.9	14.1	12.9
60.5°	11.6	12.1	12.1	12.1	13.1	13.4	13.6	13.8	13.5	12.9	11.7
61°	10.6	11.1	11.1	11.0	11.8	12.1	12.2	12.5	12.1	11.6	10.6
61.5°	9.8	10.2	10.2	10.1	10.7	11.0	11.1	11.3	11.0	10.6	9.8
62°	9.0	9.4	9.3	9.3	9.8	10.0	10.1	10.3	10.1	9.7	9.1
62.5°	8.4	8.7	8.6	8.5	9.1	9.3	9.3	9.4	9.2	9.0	8.5
63°	7.7	8.1	8.0	7.8	8.4	8.6	8.7	8.8	8.6	8.4	7.8
63.5°	7.0	7.5	7.2	7.1	7.7	7.9	8.0	8.1	8.0	7.7	7.1
64°	6.5	6.8	6.7	6.6	7.0	7.1	7.3	7.5	7.3	7.0	6.4
64.5°	6.0	6.3	6.2	6.1	6.3	6.4	6.7	6.8	6.7	6.3	5.9
65°	5.6	5.9	5.8	5.6	5.8	5.9	6.0	6.1	6.0	5.9	5.5
65.5°	5.2	5.4	5.4	5.2	5.4	5.5	5.6	5.7	5.6	5.5	5.1
66°	4.8	5.1	5.0	4.9	5.0	5.1	5.2	5.3	5.2	5.1	4.8



TEST NUMBER: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	3.9	4.1	4.0	3.9	4.0	4.1	4.2	4.2	4.2	4.1	3.8
68°	3.6	3.8	3.8	3.7	3.7	3.8	3.9	3.9	3.9	3.8	3.6
68.5°	3.4	3.6	3.6	3.5	3.5	3.5	3.6	3.7	3.6	3.6	3.3
69°	3.2	3.3	3.3	3.2	3.3	3.3	3.4	3.4	3.4	3.3	3.1
69.5°	2.9	3.1	3.1	3.0	3.1	3.1	3.2	3.2	3.2	3.1	2.9
70°	2.7	2.9	2.9	2.8	2.8	2.9	3.0	3.0	3.0	2.9	2.7
70.5°	2.4	2.7	2.7	2.6	2.7	2.7	2.8	2.8	2.8	2.7	2.4
71°	2.3	2.4	2.4	2.3	2.4	2.4	2.6	2.6	2.6	2.4	2.3
71.5°	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.1
72°	1.9	2.1	2.1	2.0	2.1	2.1	2.1	2.2	2.1	2.1	2.0
72.5°	1.8	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	1.8
73°	1.6	1.8	1.8	1.7	1.8	1.8	1.9	1.9	1.8	1.8	1.7
73.5°	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.6	1.6
74°	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.5	1.5
74.5°	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.4	1.3
75°	1.2	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.3	1.3	1.2
75.5°	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.2	1.2	1.1
76°	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.1	1.1	1.1	1.0
76.5°	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.0	1.0
77°	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	0.9	0.9
77.5°	0.7	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8
78°	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.8	0.7
78.5°	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.7	0.7
79°	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6
79.5°	0.5	0.5	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.6
80°	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5
80.5°	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4
81°	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4
81.5°	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4
82°	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
82.5°	0.2	0.2	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.3
83°	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
83.5°	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
84°	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2
84.5°	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2
85°	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
85.5°	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
86°	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
86.5°	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
87°	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.1	0.1	0.1	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: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-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: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	975.5	975.5	975.5	975.5	975.5	975.5
0.5°	975.3	975.2	975.3	975.1	974.9	974.4
1°	975.1	974.6	974.4	974.1	973.9	973.6
1.5°	974.6	973.8	973.3	973.0	972.8	972.4
2°	973.9	972.7	972.1	971.7	971.5	971.2
2.5°	972.8	971.5	970.5	969.9	969.8	969.7
3°	971.8	970.0	968.9	968.1	967.8	967.9
3.5°	970.6	968.4	966.8	966.0	965.8	965.9
4°	969.1	966.4	964.7	963.6	963.5	963.8
4.5°	967.3	964.4	962.3	961.2	960.9	961.4
5°	965.4	962.0	959.8	958.5	958.0	958.7
5.5°	963.2	959.5	956.7	955.5	955.2	955.8
6°	960.8	956.7	953.8	952.1	951.9	952.4
6.5°	958.2	953.6	950.5	948.9	948.5	949.2
7°	955.2	950.3	946.8	945.1	944.5	945.4
7.5°	951.9	946.7	943.0	941.1	940.5	941.4
8°	948.6	942.8	939.1	936.8	936.2	937.1
8.5°	944.8	938.6	934.6	932.3	931.6	932.5
9°	940.8	934.1	929.9	927.3	926.5	927.5
9.5°	936.4	929.4	925.0	921.9	921.3	922.4
10°	931.9	924.3	919.5	916.5	915.5	916.8
10.5°	927.0	918.8	913.7	910.6	909.7	910.7
11°	921.8	913.1	907.7	904.1	902.8	904.6
11.5°	916.4	907.2	901.1	897.1	896.2	897.6
12°	910.9	900.8	894.3	890.0	888.8	890.4
12.5°	904.8	894.2	887.1	882.5	881.1	882.9
13°	898.6	887.3	879.8	874.8	873.2	875.3
13.5°	892.1	880.4	872.4	866.8	865.4	867.2
14°	885.5	873.1	864.4	858.8	857.1	858.8
14.5°	878.3	865.7	856.8	850.9	848.8	850.6
15°	871.6	858.1	848.4	842.4	840.2	842.1
15.5°	864.2	850.4	840.7	834.1	831.7	833.5
16°	857.0	842.7	832.4	825.6	823.2	825.2
16.5°	849.4	835.1	824.8	817.3	814.9	816.5
17°	842.1	826.9	816.6	808.6	806.5	808.2
17.5°	834.4	819.3	808.5	800.6	797.9	799.6
18°	826.7	811.4	800.2	792.2	789.6	791.3
18.5°	819.0	803.5	792.6	784.1	781.6	782.8
19°	811.6	795.8	784.8	776.7	773.8	775.0
19.5°	804.1	788.5	777.3	769.1	766.1	767.2
20°	796.9	780.9	769.6	761.5	758.4	759.9
20.5°	789.2	773.2	762.0	753.9	750.6	752.2
21°	782.2	765.4	753.7	745.5	742.9	744.6



TEST NUMBER: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	758.9	740.1	726.3	718.3	715.6	717.5
23°	751.0	730.4	716.3	707.6	705.3	707.6
23.5°	743.1	720.8	705.7	696.4	694.4	696.5
24°	735.2	710.4	694.6	684.7	682.5	684.8
24.5°	725.7	699.7	683.3	671.8	669.9	672.5
25°	715.9	688.5	671.7	658.6	657.2	660.3
25.5°	705.2	677.0	659.8	644.8	643.4	647.1
26°	694.3	665.5	647.5	630.9	629.8	634.4
26.5°	682.0	653.6	634.7	617.4	615.4	621.0
27°	669.5	641.4	621.6	604.2	600.9	607.9
27.5°	655.8	628.5	608.1	590.9	586.5	594.3
28°	641.8	615.2	594.3	578.0	572.5	580.8
28.5°	626.9	601.5	580.1	565.4	558.3	566.6
29°	611.5	587.1	565.9	552.6	545.2	552.5
29.5°	595.9	572.4	551.5	539.6	531.2	538.1
30°	580.6	557.2	537.3	526.4	517.9	523.4
30.5°	564.8	542.0	522.9	512.4	504.7	508.3
31°	549.9	526.5	509.4	498.3	491.3	493.6
31.5°	535.3	510.7	495.4	483.6	477.6	479.0
32°	520.9	495.0	481.5	468.5	463.9	464.5
32.5°	506.8	479.2	467.5	453.6	449.9	450.8
33°	492.1	463.3	453.1	439.1	435.8	437.0
33.5°	477.8	447.3	438.2	424.7	421.8	422.9
34°	463.4	432.2	423.7	410.4	407.6	409.1
34.5°	448.9	417.1	408.7	396.1	393.0	395.1
35°	434.1	402.2	393.8	382.8	379.2	380.9
35.5°	419.3	388.2	378.6	369.7	365.5	367.9
36°	404.4	374.2	361.9	356.2	352.7	354.6
36.5°	389.6	360.5	347.9	342.9	339.8	341.1
37°	374.8	346.8	333.7	329.4	326.9	327.8
37.5°	360.3	333.3	319.6	316.0	314.2	314.4
38°	346.2	319.6	305.4	302.5	301.3	301.0
38.5°	332.4	306.0	291.4	289.1	288.8	288.5
39°	318.8	292.7	278.5	275.9	276.3	276.4
39.5°	305.5	279.6	265.3	262.7	263.3	264.5
40°	292.2	266.9	252.3	249.8	250.8	252.8
40.5°	279.3	254.3	239.9	237.1	238.6	241.2
41°	266.5	241.7	227.7	224.7	226.8	230.1
41.5°	254.0	229.5	215.7	212.7	215.2	219.3
42°	241.5	217.9	204.2	201.1	203.6	208.8
42.5°	229.6	206.2	193.2	189.6	192.8	198.3
43°	217.8	195.1	182.5	178.5	182.1	188.3
43.5°	206.3	184.1	172.1	167.5	171.8	178.6



TEST NUMBER: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	173.6	153.8	143.3	137.8	142.8	151.3
45.5°	163.4	144.3	134.6	128.8	133.8	142.9
46°	153.3	135.3	126.3	120.2	125.2	134.6
46.5°	143.4	126.8	118.1	112.2	117.2	126.8
47°	133.9	118.5	110.5	104.9	109.6	118.9
47.5°	124.5	110.3	103.3	98.2	102.4	111.9
48°	115.6	102.9	96.5	91.7	95.7	104.8
48.5°	107.5	95.8	89.9	85.6	89.4	98.1
49°	99.4	89.0	83.6	79.9	83.4	91.6
49.5°	92.5	82.6	77.7	74.8	78.1	85.4
50°	85.5	76.2	72.1	69.8	72.7	79.5
50.5°	78.6	70.3	66.7	64.9	67.8	73.9
51°	71.7	64.8	61.5	60.3	63.0	68.5
51.5°	65.8	59.5	56.8	56.0	58.4	63.3
52°	60.4	54.6	52.2	51.9	54.0	58.5
52.5°	55.1	49.7	47.9	47.8	49.9	53.8
53°	50.4	45.2	43.8	43.8	45.9	49.4
53.5°	45.9	41.1	40.0	40.2	42.2	45.2
54°	41.7	37.5	36.4	36.8	38.6	41.3
54.5°	38.1	34.4	33.5	33.9	35.7	38.0
55°	34.7	31.3	30.5	30.9	32.7	34.9
55.5°	31.3	28.2	27.5	28.0	29.6	31.9
56°	28.0	25.1	24.5	25.0	26.5	28.9
56.5°	25.0	22.0	21.5	22.0	23.5	25.8
57°	22.3	19.6	19.2	19.7	21.0	22.8
57.5°	19.8	17.6	17.3	17.8	19.0	20.5
58°	17.7	15.8	15.5	16.0	17.3	18.6
58.5°	15.9	14.2	14.1	14.5	15.6	16.8
59°	14.3	12.9	12.8	13.3	14.3	15.3
59.5°	13.0	11.6	11.5	12.0	13.0	14.0
60°	11.7	10.6	10.5	11.0	11.9	12.8
60.5°	10.7	9.7	9.6	10.1	10.9	11.6
61°	9.8	8.9	8.8	9.3	10.0	10.6
61.5°	9.1	8.2	8.1	8.6	9.3	9.8
62°	8.4	7.5	7.5	7.9	8.6	9.0
62.5°	7.8	6.8	6.8	7.2	7.9	8.4
63°	7.0	6.3	6.3	6.7	7.2	7.7
63.5°	6.4	5.8	5.9	6.2	6.7	7.0
64°	5.9	5.4	5.4	5.7	6.2	6.5
64.5°	5.5	5.0	5.0	5.3	5.7	6.0
65°	5.1	4.7	4.7	4.9	5.3	5.6
65.5°	4.7	4.3	4.4	4.6	5.0	5.2
66°	4.4	4.0	4.1	4.3	4.6	4.8



TEST NUMBER: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	3.5	3.3	3.3	3.5	3.7	3.9
68°	3.3	3.1	3.1	3.3	3.5	3.6
68.5°	3.1	2.9	2.9	3.0	3.2	3.4
69°	2.9	2.7	2.7	2.8	3.0	3.2
69.5°	2.7	2.4	2.4	2.6	2.8	2.9
70°	2.4	2.2	2.2	2.4	2.6	2.7
70.5°	2.3	2.1	2.1	2.2	2.3	2.4
71°	2.1	1.9	1.9	2.0	2.1	2.3
71.5°	2.0	1.8	1.8	1.9	2.0	2.1
72°	1.8	1.7	1.7	1.8	1.8	1.9
72.5°	1.7	1.5	1.5	1.6	1.7	1.8
73°	1.6	1.4	1.4	1.5	1.6	1.6
73.5°	1.5	1.3	1.3	1.4	1.4	1.5
74°	1.4	1.2	1.2	1.3	1.3	1.4
74.5°	1.3	1.1	1.1	1.2	1.2	1.3
75°	1.2	1.0	1.0	1.1	1.1	1.2
75.5°	1.1	1.0	1.0	1.0	1.0	1.1
76°	1.0	0.9	0.9	0.9	0.9	1.0
76.5°	0.9	0.8	0.8	0.8	0.8	0.9
77°	0.8	0.7	0.7	0.7	0.8	0.8
77.5°	0.8	0.7	0.7	0.7	0.7	0.7
78°	0.7	0.6	0.6	0.6	0.6	0.7
78.5°	0.6	0.6	0.6	0.6	0.6	0.6
79°	0.6	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.4	0.5
80°	0.5	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.4	0.3	0.4
81°	0.4	0.3	0.3	0.3	0.3	0.3
81.5°	0.3	0.3	0.3	0.3	0.3	0.3
82°	0.3	0.3	0.3	0.2	0.2	0.2
82.5°	0.3	0.2	0.2	0.2	0.2	0.2
83°	0.2	0.2	0.2	0.2	0.2	0.1
83.5°	0.2	0.2	0.2	0.2	0.1	0.1
84°	0.2	0.1	0.1	0.1	0.1	0.1
84.5°	0.1	0.1	0.1	0.1	0.1	0.1
85°	0.1	0.1	0.1	0.1	0.1	0.1
85.5°	0.1	0.1	0.1	0.1	0.0	0.0
86°	0.1	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: P775671

CATALOG NUMBER: HCDJBL510CSD-HCD4TRH-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

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°	736.1	741.5	749.2	759.2	776.2	787.9	796.7	800.4	799.7	794.8	786.2
22°	727.4	733.5	741.3	751.8	768.3	780.5	789.1	793.2	792.4	787.3	778.6



44°	169.1	174.6	178.6	185.6	200.9	214.7	227.0	232.5	227.3	219.1	209.5
44.5°	160.2	165.5	168.6	174.3	189.9	203.0	215.3	219.8	215.0	207.5	197.5



66.5°	4.5	4.7	4.7	4.5	4.6	4.7	4.8	4.9	4.8	4.7	4.4
67°	4.2	4.4	4.3	4.2	4.3	4.4	4.5	4.5	4.5	4.4	4.1



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

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

Scaled Data Report





21.5°	774.7	757.4	745.1	736.7	734.5	736.1
22°	766.8	748.8	735.9	727.8	725.3	727.4



44°	195.2	173.7	162.2	157.4	161.9	169.1
44.5°	184.4	163.6	152.5	147.4	152.3	160.2

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

Scaled Data Report



66.5°	4.1	3.8	3.8	4.0	4.3	4.5
67°	3.8	3.5	3.6	3.8	4.0	4.2

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

Scaled Data Report



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

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

Scaled Data Report



(END OF REPORT)