

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

Report Number: P644102

Luminaire Tested: ML5615LSWW9FS1E - 592SC WW - 1500LM - 3000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644102
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-129)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5615LSWW9FS1E - 592SC WW - 1500LM - 3000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1036.9 lumens
Efficiency: N/A
Efficacy: 60.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.26
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

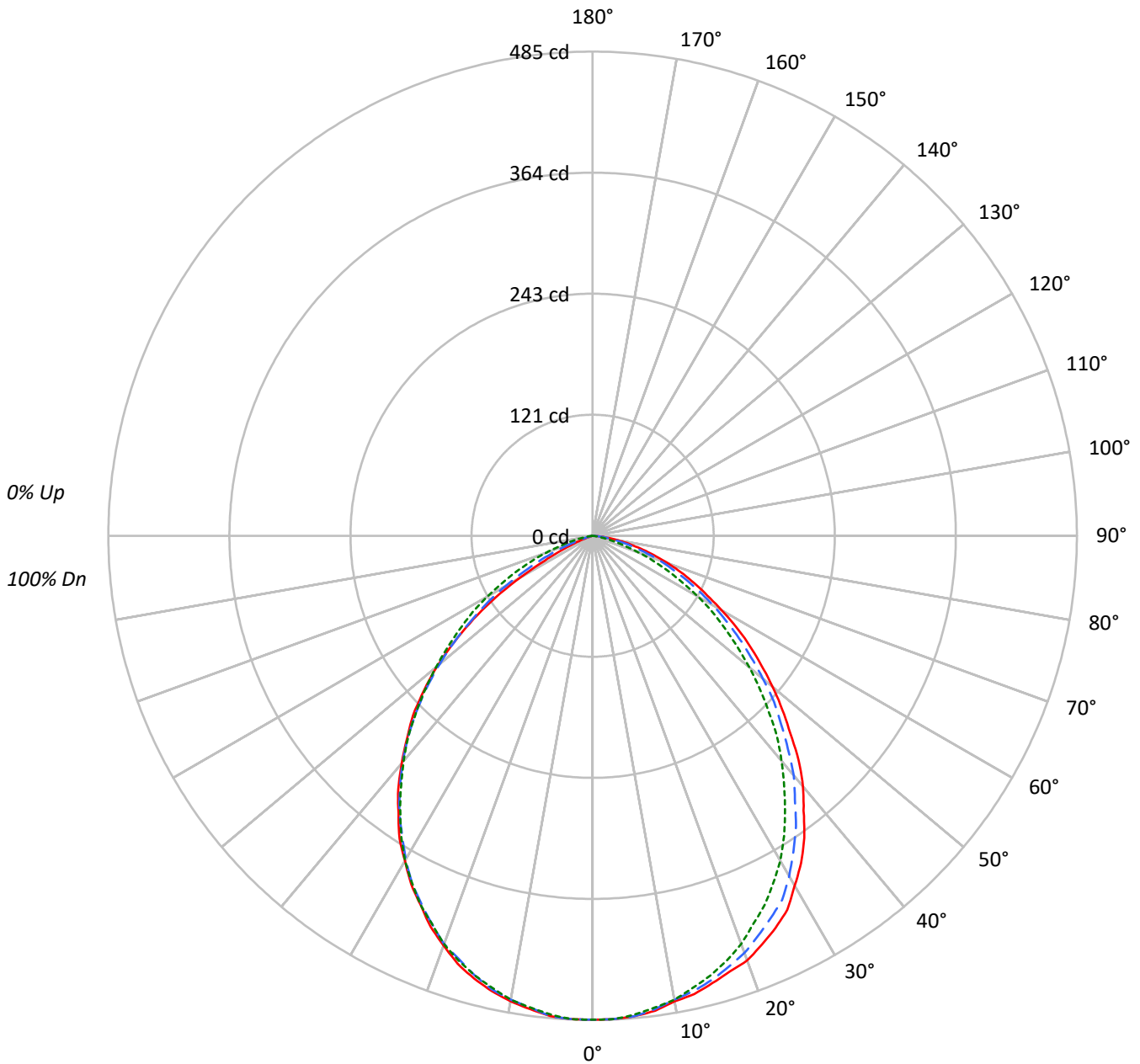
Input Watts (W): 17.1
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P644102

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 1500LM - 3000K

Luminous Intensity Polar Plot





TEST NUMBER: P644102

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 1500LM - 3000K

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					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				100
1	111	107	103	100	108	105	101	98	100	98	95	97	94	93	93	91	90	88				88
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66				66
4	87	76	68	62	85	75	68	62	72	66	61	70	65	60	68	63	60	58				58
5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53	51				51
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45				45
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40				40
8	65	52	44	39	63	52	44	39	50	43	38	49	43	38	48	42	38	36				36
9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	35	33				33
10	57	45	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	38263	38263	38263	38263	38263
5°	38282	38282	38155	38282	38282
10°	37955	37827	37827	37827	37955
15°	37913	37651	37259	37259	37520
20°	38030	37358	36552	36552	36686
25°	37759	36783	35529	35389	35529
30°	36890	35869	34264	34119	34264
35°	35608	34221	32370	32525	32679
40°	33790	32306	30328	30493	30657
45°	31248	29819	27865	27865	28401
50°	28885	27313	25152	24562	24955
55°	26425	24663	22241	20479	20039
60°	23493	21977	19198	15914	13136
65°	20920	19127	15541	10460	6276
70°	18465	16249	11448	5170	1846
75°	15128	12688	6832	1464	488
80°	11638	8728	2909	0	0
85°	5797	4348	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 31426 cd/sqm



TEST NUMBER: P644102

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 1500LM - 3000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.7	4.4
10°-20°	129.2	12.5
20°-30°	190.6	18.4
30°-40°	215.8	20.8
40°-50°	199.3	19.2
50°-60°	147.2	14.2
60°-70°	79.2	7.6
70°-80°	26.5	2.6
80°-90°	3.4	0.3
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°	365.6	35.3
0°-40°	581.3	56.1
0°-60°	927.9	89.5
0°-90°	1036.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1036.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	485	485	485	485	485	
5°	483	483	482	483	483	46
15°	464	461	456	456	459	131
25°	434	422	408	406	408	199
35°	370	355	336	338	339	230
45°	280	267	250	250	254	217
55°	192	179	162	149	146	172
65°	112	102	83	56	34	112
75°	50	42	22	5	2	54
85°	6	5	0	0	0	10
90°	0	0	0	0	0	



TEST NUMBER: P644102

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 1500LM - 3000K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7
2.5°	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7
5°	483.1	483.1	481.5	483.1	483.1	483.1	483.1	481.5	483.1	483.1	483.1
7.5°	479.9	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3
10°	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	471.9
12.5°	470.3	468.7	468.7	468.7	468.7	468.7	468.7	467.1	468.7	467.1	467.1
15°	463.9	463.9	463.9	463.9	463.9	463.9	462.3	462.3	462.3	462.3	460.7
17.5°	457.5	457.5	459.1	459.1	457.5	457.5	457.5	455.9	454.3	454.3	452.7
20°	452.7	452.7	451.1	451.1	449.5	451.1	449.5	447.9	447.9	446.3	444.7
22.5°	443.1	443.1	443.1	443.1	443.1	441.5	441.5	439.9	438.3	436.7	433.5
25°	433.5	433.5	433.5	433.5	431.9	431.9	431.9	428.7	427.1	425.5	422.3
27.5°	422.3	420.7	420.7	420.7	419.1	419.1	417.5	415.9	414.3	412.7	411.1
30°	404.7	404.7	404.7	404.7	403.1	401.5	401.5	399.9	398.3	395.1	393.5
32.5°	388.7	388.7	387.1	385.5	385.5	385.5	383.9	382.3	379.1	377.5	374.3
35°	369.5	367.9	367.9	366.3	366.3	366.3	364.7	361.5	359.9	358.3	355.1
37.5°	347.1	348.7	347.1	347.1	345.5	343.9	342.3	340.7	339.1	335.9	332.7
40°	327.9	327.9	326.3	324.7	323.1	323.1	321.5	319.9	318.3	316.7	313.5
42.5°	305.5	305.5	303.9	303.9	302.3	302.3	299.1	297.5	295.9	294.3	289.5
45°	279.9	279.9	281.5	279.9	278.3	276.7	276.7	275.1	271.9	270.3	267.1
47.5°	257.6	259.1	257.6	256.0	256.0	254.4	254.4	251.2	251.2	248.0	246.4
50°	235.2	235.2	235.2	235.2	233.6	232.0	232.0	230.4	227.2	225.6	222.4
52.5°	212.8	212.8	212.8	212.8	211.2	211.2	209.6	208.0	206.4	203.2	200.0
55°	192.0	190.4	190.4	190.4	188.8	188.8	187.2	185.6	184.0	182.4	179.2
57.5°	171.2	169.6	169.6	168.0	168.0	166.4	166.4	164.8	163.2	160.0	158.4
60°	148.8	150.4	148.8	148.8	147.2	147.2	147.2	145.6	142.4	140.8	139.2
62.5°	129.6	131.2	129.6	128.0	128.0	128.0	128.0	124.8	123.2	121.6	120.0
65°	112.0	112.0	112.0	110.4	110.4	110.4	107.2	107.2	105.6	104.0	102.4
67.5°	96.0	94.4	94.4	94.4	92.8	92.8	91.2	91.2	88.0	88.0	84.8
70°	80.0	78.4	78.4	78.4	76.8	75.2	76.8	73.6	72.0	70.4	70.4
72.5°	64.0	64.0	62.4	62.4	62.4	60.8	60.8	59.2	57.6	56.0	54.4
75°	49.6	49.6	49.6	48.0	48.0	46.4	46.4	44.8	44.8	41.6	41.6
77.5°	36.8	36.8	36.8	35.2	35.2	35.2	33.6	33.6	32.0	30.4	28.8
80°	25.6	24.0	24.0	24.0	24.0	22.4	22.4	22.4	20.8	20.8	19.2
82.5°	14.4	14.4	14.4	14.4	14.4	14.4	12.8	12.8	12.8	11.2	11.2
85°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	4.8	4.8	4.8
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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: P644102

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 1500LM - 3000K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7
2.5°	484.7	484.7	484.7	484.7	483.1	484.7	483.1	484.7	484.7	484.7	484.7
5°	483.1	481.5	481.5	481.5	483.1	483.1	481.5	481.5	481.5	481.5	481.5
7.5°	478.3	478.3	478.3	476.7	478.3	478.3	476.7	478.3	478.3	476.7	478.3
10°	473.5	473.5	471.9	471.9	471.9	471.9	471.9	471.9	470.3	471.9	471.9
12.5°	467.1	467.1	467.1	465.5	465.5	465.5	465.5	465.5	463.9	463.9	465.5
15°	460.7	460.7	459.1	459.1	459.1	457.5	457.5	457.5	457.5	455.9	455.9
17.5°	452.7	451.1	451.1	449.5	449.5	447.9	447.9	446.3	446.3	446.3	444.7
20°	443.1	441.5	439.9	439.9	438.3	438.3	436.7	436.7	435.1	435.1	433.5
22.5°	431.9	430.3	428.7	427.1	427.1	425.5	425.5	423.9	422.3	420.7	420.7
25°	422.3	419.1	417.5	415.9	412.7	412.7	411.1	411.1	409.5	407.9	406.3
27.5°	407.9	404.7	403.1	401.5	399.9	398.3	395.1	395.1	393.5	391.9	390.3
30°	390.3	388.7	385.5	383.9	382.3	382.3	379.1	375.9	375.9	375.9	374.3
32.5°	372.7	369.5	367.9	364.7	363.1	363.1	361.5	358.3	356.7	356.7	355.1
35°	353.5	350.3	347.1	345.5	343.9	342.3	340.7	339.1	337.5	335.9	334.3
37.5°	331.1	327.9	326.3	324.7	323.1	321.5	319.9	318.3	316.7	315.1	316.7
40°	310.3	307.1	303.9	302.3	300.7	300.7	299.1	297.5	295.9	294.3	294.3
42.5°	287.9	284.7	283.1	281.5	279.9	278.3	276.7	275.1	273.5	273.5	271.9
45°	263.9	262.3	259.1	257.6	256.0	256.0	252.8	251.2	251.2	249.6	249.6
47.5°	243.2	240.0	236.8	235.2	233.6	232.0	230.4	228.8	227.2	227.2	227.2
50°	219.2	217.6	214.4	212.8	211.2	211.2	209.6	208.0	206.4	204.8	204.8
52.5°	196.8	195.2	195.2	192.0	190.4	190.4	187.2	187.2	184.0	182.4	180.8
55°	177.6	174.4	172.8	169.6	169.6	168.0	166.4	164.8	163.2	161.6	160.0
57.5°	155.2	153.6	152.0	150.4	150.4	148.8	147.2	145.6	142.4	142.4	139.2
60°	137.6	134.4	132.8	131.2	129.6	129.6	128.0	126.4	123.2	121.6	120.0
62.5°	118.4	115.2	115.2	113.6	110.4	110.4	108.8	105.6	104.0	100.8	99.2
65°	100.8	99.2	96.0	94.4	94.4	92.8	89.6	88.0	86.4	83.2	80.0
67.5°	83.2	81.6	80.0	76.8	76.8	75.2	72.0	70.4	67.2	65.6	62.4
70°	67.2	65.6	64.0	60.8	60.8	59.2	57.6	54.4	51.2	49.6	46.4
72.5°	52.8	51.2	49.6	46.4	46.4	44.8	41.6	40.0	36.8	33.6	32.0
75°	40.0	38.4	35.2	33.6	32.0	32.0	28.8	27.2	25.6	22.4	20.8
77.5°	27.2	25.6	24.0	22.4	22.4	20.8	19.2	17.6	16.0	14.4	11.2
80°	17.6	16.0	14.4	14.4	12.8	12.8	11.2	9.6	8.0	6.4	4.8
82.5°	9.6	9.6	8.0	6.4	6.4	6.4	4.8	4.8	3.2	1.6	1.6
85°	3.2	3.2	3.2	3.2	1.6	1.6	1.6	1.6	1.6	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
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: P644102

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 1500LM - 3000K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7
2.5°	484.7	484.7	484.7	484.7	484.7	484.7	483.1	484.7	484.7	484.7	483.1
5°	483.1	481.5	481.5	483.1	481.5	481.5	483.1	483.1	483.1	481.5	481.5
7.5°	476.7	478.3	476.7	476.7	478.3	478.3	478.3	478.3	476.7	476.7	478.3
10°	471.9	471.9	470.3	471.9	470.3	471.9	471.9	471.9	471.9	471.9	471.9
12.5°	463.9	463.9	463.9	465.5	463.9	463.9	465.5	465.5	465.5	465.5	465.5
15°	454.3	454.3	455.9	454.3	455.9	455.9	455.9	455.9	455.9	455.9	457.5
17.5°	444.7	444.7	444.7	444.7	444.7	444.7	444.7	444.7	444.7	446.3	446.3
20°	433.5	433.5	433.5	433.5	433.5	431.9	433.5	433.5	435.1	435.1	435.1
22.5°	419.1	419.1	419.1	419.1	419.1	419.1	419.1	419.1	420.7	422.3	420.7
25°	404.7	404.7	404.7	404.7	404.7	404.7	404.7	406.3	406.3	406.3	407.9
27.5°	390.3	390.3	390.3	388.7	390.3	388.7	390.3	390.3	391.9	390.3	391.9
30°	374.3	372.7	372.7	372.7	372.7	374.3	372.7	372.7	374.3	375.9	374.3
32.5°	353.5	353.5	353.5	355.1	355.1	355.1	356.7	355.1	355.1	356.7	356.7
35°	334.3	334.3	334.3	335.9	335.9	335.9	335.9	337.5	337.5	337.5	339.1
37.5°	313.5	315.1	313.5	315.1	315.1	316.7	316.7	316.7	316.7	318.3	318.3
40°	294.3	292.7	294.3	294.3	294.3	294.3	294.3	294.3	295.9	297.5	297.5
42.5°	271.9	271.9	271.9	271.9	271.9	271.9	273.5	273.5	273.5	275.1	275.1
45°	249.6	248.0	248.0	248.0	248.0	249.6	248.0	249.6	249.6	251.2	251.2
47.5°	225.6	225.6	225.6	225.6	225.6	225.6	225.6	225.6	225.6	227.2	225.6
50°	204.8	203.2	201.6	201.6	200.0	201.6	200.0	200.0	200.0	201.6	200.0
52.5°	180.8	179.2	177.6	177.6	177.6	176.0	174.4	174.4	174.4	172.8	172.8
55°	160.0	158.4	155.2	156.8	153.6	152.0	152.0	150.4	148.8	148.8	147.2
57.5°	137.6	136.0	134.4	132.8	132.8	129.6	128.0	126.4	124.8	123.2	120.0
60°	118.4	115.2	112.0	112.0	110.4	108.8	105.6	102.4	100.8	97.6	96.0
62.5°	97.6	94.4	91.2	89.6	88.0	86.4	83.2	80.0	76.8	75.2	72.0
65°	78.4	75.2	72.0	70.4	68.8	65.6	62.4	59.2	56.0	52.8	51.2
67.5°	59.2	56.0	54.4	51.2	49.6	46.4	43.2	41.6	38.4	35.2	30.4
70°	43.2	40.0	36.8	35.2	33.6	30.4	28.8	25.6	22.4	20.8	17.6
72.5°	28.8	25.6	24.0	22.4	20.8	19.2	16.0	14.4	11.2	9.6	8.0
75°	17.6	16.0	14.4	12.8	11.2	9.6	8.0	6.4	4.8	3.2	1.6
77.5°	9.6	8.0	6.4	6.4	4.8	3.2	3.2	1.6	1.6	1.6	1.6
80°	4.8	3.2	1.6	1.6	1.6	1.6	0.0	0.0	0.0	0.0	1.6
82.5°	1.6	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
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P644102

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 1500LM - 3000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7
2.5°	484.7	484.7	484.7	484.7	484.7	484.7	484.7	484.7
5°	483.1	483.1	481.5	483.1	481.5	481.5	481.5	483.1
7.5°	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3
10°	471.9	471.9	471.9	473.5	473.5	473.5	471.9	473.5
12.5°	465.5	465.5	465.5	467.1	465.5	467.1	465.5	467.1
15°	457.5	457.5	459.1	459.1	457.5	457.5	459.1	459.1
17.5°	446.3	447.9	447.9	447.9	447.9	447.9	447.9	449.5
20°	436.7	436.7	435.1	436.7	436.7	438.3	438.3	436.7
22.5°	420.7	423.9	423.9	423.9	423.9	423.9	423.9	423.9
25°	407.9	407.9	407.9	409.5	407.9	407.9	409.5	407.9
27.5°	391.9	393.5	391.9	393.5	393.5	393.5	393.5	393.5
30°	375.9	375.9	375.9	375.9	375.9	377.5	375.9	375.9
32.5°	356.7	358.3	358.3	358.3	359.9	358.3	358.3	359.9
35°	339.1	339.1	339.1	340.7	339.1	340.7	340.7	339.1
37.5°	318.3	319.9	318.3	319.9	319.9	319.9	319.9	319.9
40°	299.1	297.5	299.1	297.5	299.1	299.1	299.1	297.5
42.5°	275.1	276.7	276.7	276.7	276.7	276.7	276.7	275.1
45°	251.2	252.8	252.8	252.8	252.8	252.8	254.4	254.4
47.5°	225.6	228.8	228.8	228.8	227.2	230.4	228.8	228.8
50°	200.0	200.0	201.6	201.6	203.2	203.2	203.2	203.2
52.5°	174.4	172.8	174.4	174.4	176.0	174.4	176.0	174.4
55°	145.6	145.6	145.6	144.0	145.6	145.6	145.6	145.6
57.5°	120.0	118.4	116.8	115.2	115.2	115.2	113.6	115.2
60°	92.8	89.6	91.2	88.0	86.4	84.8	84.8	83.2
62.5°	68.8	65.6	64.0	62.4	59.2	56.0	56.0	54.4
65°	46.4	43.2	41.6	38.4	36.8	35.2	33.6	33.6
67.5°	28.8	25.6	25.6	24.0	22.4	20.8	19.2	19.2
70°	16.0	14.4	12.8	11.2	11.2	9.6	8.0	8.0
72.5°	6.4	4.8	4.8	3.2	3.2	3.2	3.2	1.6
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	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
85°	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
90°	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



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°

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



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



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



(END OF REPORT)