

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: P644108

Luminaire Tested: ML5615LSWW9FS1E - 592SC WW - 900LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644108
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 - 900LM - 3500K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

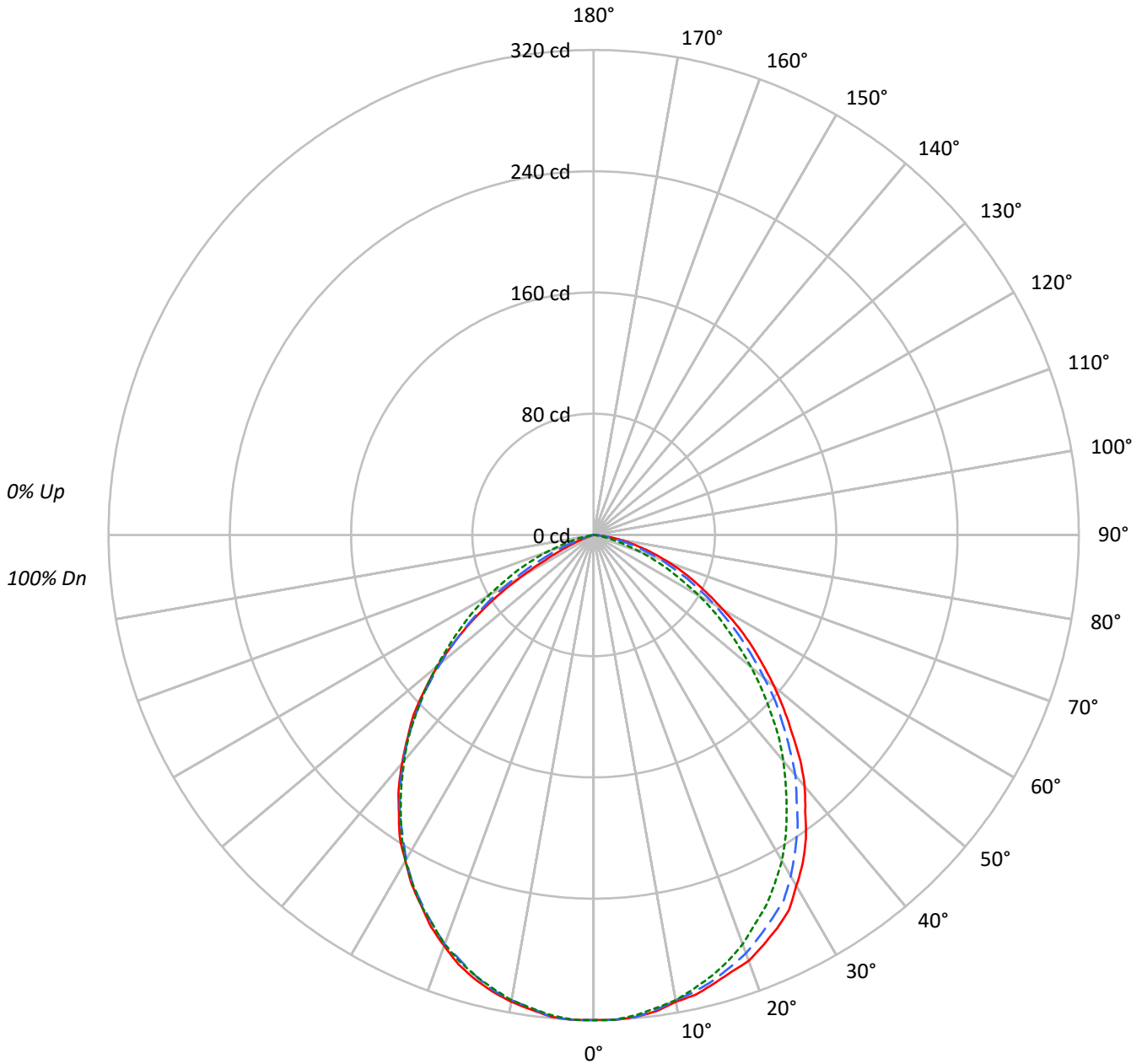
Lumens per Lamp: N/A
Luminaire Lumens: 685.0 lumens
Efficiency: N/A
Efficacy: 65.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.26
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

Input Watts (W): 10.5
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: P644108
CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 3500K

Luminous Intensity Polar Plot





TEST NUMBER: P644108

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 3500K

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	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°	25277	25277	25277	25277	25277
5°	25294	25294	25207	25294	25294
10°	25074	24993	24993	24993	25074
15°	25049	24877	24616	24616	24787
20°	25127	24681	24144	24144	24236
25°	24946	24301	23474	23378	23474
30°	24374	23700	22633	22542	22633
35°	23524	22608	21384	21490	21587
40°	22321	21342	20043	20146	20260
45°	20642	19704	18409	18409	18755
50°	19072	18041	16616	16223	16481
55°	17451	16295	14685	13529	13240
60°	15520	14509	12678	10515	8684
65°	13822	12627	10273	6911	4147
70°	12187	10733	7570	3416	1223
75°	10004	8388	4514	976	336
80°	7683	5773	1909	0	0
85°	3804	2898	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 20765 cd/sqm



TEST NUMBER: P644108

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 3500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.2	4.4
10°-20°	85.4	12.5
20°-30°	125.9	18.4
30°-40°	142.6	20.8
40°-50°	131.6	19.2
50°-60°	97.3	14.2
60°-70°	52.3	7.6
70°-80°	17.5	2.6
80°-90°	2.2	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°	241.5	35.3
0°-40°	384.1	56.1
0°-60°	613.0	89.5
0°-90°	685.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	685.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	320	320	320	320	320	
5°	319	319	318	319	319	30
15°	306	304	301	301	303	87
25°	286	279	270	268	270	132
35°	244	235	222	223	224	152
45°	185	176	165	165	168	143
55°	127	118	107	98	96	113
65°	74	68	55	37	22	74
75°	33	28	15	3	1	35
85°	4	3	0	0	0	6
90°	0	0	0	0	0	



TEST NUMBER: P644108

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2
2.5°	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2
5°	319.2	319.2	318.1	319.2	319.2	319.2	319.2	318.1	319.2	319.2	319.2
7.5°	317.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0
10°	312.8	312.8	312.8	312.8	312.8	312.8	312.8	312.8	312.8	312.8	311.8
12.5°	310.7	309.6	309.6	309.6	309.6	309.6	309.6	308.6	309.6	308.6	308.6
15°	306.5	306.5	306.5	306.5	306.5	306.5	305.4	305.4	305.4	305.4	304.4
17.5°	302.2	302.2	303.3	303.3	302.2	302.2	302.2	301.2	300.1	300.1	299.1
20°	299.1	299.1	298.0	298.0	297.0	298.0	297.0	295.9	295.9	294.8	293.8
22.5°	292.7	292.7	292.7	292.7	292.7	291.7	291.7	290.6	289.6	288.5	286.4
25°	286.4	286.4	286.4	286.4	285.3	285.3	285.3	283.2	282.2	281.1	279.0
27.5°	279.0	277.9	277.9	277.9	276.9	276.9	275.8	274.8	273.7	272.7	271.6
30°	267.4	267.4	267.4	267.4	266.3	265.3	265.3	264.2	263.1	261.0	260.0
32.5°	256.8	256.8	255.7	254.7	254.7	254.7	253.6	252.6	250.5	249.4	247.3
35°	244.1	243.1	243.1	242.0	242.0	242.0	240.9	238.8	237.8	236.7	234.6
37.5°	229.3	230.4	229.3	229.3	228.3	227.2	226.2	225.1	224.0	221.9	219.8
40°	216.6	216.6	215.6	214.5	213.5	213.5	212.4	211.4	210.3	209.2	207.1
42.5°	201.8	201.8	200.8	200.8	199.7	199.7	197.6	196.6	195.5	194.5	191.3
45°	184.9	184.9	186.0	184.9	183.9	182.8	182.8	181.8	179.7	178.6	176.5
47.5°	170.1	171.2	170.1	169.1	169.1	168.0	168.0	165.9	165.9	163.8	162.7
50°	155.3	155.3	155.3	155.3	154.3	153.2	153.2	152.2	150.1	149.0	146.9
52.5°	140.6	140.6	140.6	140.6	139.5	139.5	138.4	137.4	136.3	134.2	132.1
55°	126.8	125.8	125.8	125.8	124.7	124.7	123.6	122.6	121.5	120.5	118.4
57.5°	113.1	112.0	112.0	111.0	111.0	109.9	109.9	108.9	107.8	105.7	104.6
60°	98.3	99.3	98.3	98.3	97.2	97.2	97.2	96.2	94.1	93.0	91.9
62.5°	85.6	86.7	85.6	84.5	84.5	84.5	84.5	82.4	81.4	80.3	79.3
65°	74.0	74.0	74.0	72.9	72.9	72.9	70.8	70.8	69.7	68.7	67.6
67.5°	63.4	62.4	62.4	62.4	61.3	61.3	60.2	60.2	58.1	58.1	56.0
70°	52.8	51.8	51.8	51.8	50.7	49.7	50.7	48.6	47.6	46.5	46.5
72.5°	42.3	42.3	41.2	41.2	41.2	40.2	40.2	39.1	38.0	37.0	35.9
75°	32.8	32.8	32.8	31.7	31.7	30.6	30.6	29.6	29.6	27.5	27.5
77.5°	24.3	24.3	24.3	23.2	23.2	23.2	22.2	22.2	21.1	20.1	19.0
80°	16.9	15.9	15.9	15.9	15.9	14.8	14.8	14.8	13.7	13.7	12.7
82.5°	9.5	9.5	9.5	9.5	9.5	9.5	8.5	8.5	8.5	7.4	7.4
85°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	3.2	3.2	3.2
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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: P644108

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2
2.5°	320.2	320.2	320.2	320.2	319.2	320.2	319.2	320.2	320.2	320.2	320.2
5°	319.2	318.1	318.1	318.1	319.2	319.2	318.1	318.1	318.1	318.1	318.1
7.5°	316.0	316.0	316.0	314.9	316.0	316.0	314.9	316.0	316.0	314.9	316.0
10°	312.8	312.8	311.8	311.8	311.8	311.8	311.8	311.8	310.7	311.8	311.8
12.5°	308.6	308.6	308.6	307.5	307.5	307.5	307.5	307.5	306.5	306.5	307.5
15°	304.4	304.4	303.3	303.3	303.3	302.2	302.2	302.2	302.2	301.2	301.2
17.5°	299.1	298.0	298.0	297.0	297.0	295.9	295.9	294.8	294.8	294.8	293.8
20°	292.7	291.7	290.6	290.6	289.6	289.6	288.5	288.5	287.4	287.4	286.4
22.5°	285.3	284.3	283.2	282.2	282.2	281.1	281.1	280.1	279.0	277.9	277.9
25°	279.0	276.9	275.8	274.8	272.7	272.7	271.6	271.6	270.5	269.5	268.4
27.5°	269.5	267.4	266.3	265.3	264.2	263.1	261.0	261.0	260.0	258.9	257.9
30°	257.9	256.8	254.7	253.6	252.6	252.6	250.5	248.3	248.3	248.3	247.3
32.5°	246.2	244.1	243.1	240.9	239.9	239.9	238.8	236.7	235.7	235.7	234.6
35°	233.6	231.4	229.3	228.3	227.2	226.2	225.1	224.0	223.0	221.9	220.9
37.5°	218.8	216.6	215.6	214.5	213.5	212.4	211.4	210.3	209.2	208.2	209.2
40°	205.0	202.9	200.8	199.7	198.7	198.7	197.6	196.6	195.5	194.5	194.5
42.5°	190.2	188.1	187.1	186.0	184.9	183.9	182.8	181.8	180.7	180.7	179.7
45°	174.4	173.3	171.2	170.1	169.1	169.1	167.0	165.9	165.9	164.9	164.9
47.5°	160.6	158.5	156.4	155.3	154.3	153.2	152.2	151.1	150.1	150.1	150.1
50°	144.8	143.7	141.6	140.6	139.5	139.5	138.4	137.4	136.3	135.3	135.3
52.5°	130.0	128.9	128.9	126.8	125.8	125.8	123.6	123.6	121.5	120.5	119.4
55°	117.3	115.2	114.1	112.0	112.0	111.0	109.9	108.9	107.8	106.7	105.7
57.5°	102.5	101.5	100.4	99.3	99.3	98.3	97.2	96.2	94.1	94.1	91.9
60°	90.9	88.8	87.7	86.7	85.6	85.6	84.5	83.5	81.4	80.3	79.3
62.5°	78.2	76.1	76.1	75.0	72.9	72.9	71.9	69.7	68.7	66.6	65.5
65°	66.6	65.5	63.4	62.4	62.4	61.3	59.2	58.1	57.1	55.0	52.8
67.5°	55.0	53.9	52.8	50.7	50.7	49.7	47.6	46.5	44.4	43.3	41.2
70°	44.4	43.3	42.3	40.2	40.2	39.1	38.0	35.9	33.8	32.8	30.6
72.5°	34.9	33.8	32.8	30.6	30.6	29.6	27.5	26.4	24.3	22.2	21.1
75°	26.4	25.4	23.2	22.2	21.1	21.1	19.0	18.0	16.9	14.8	13.7
77.5°	18.0	16.9	15.9	14.8	14.8	13.7	12.7	11.6	10.6	9.5	7.4
80°	11.6	10.6	9.5	9.5	8.5	8.5	7.4	6.3	5.3	4.2	3.2
82.5°	6.3	6.3	5.3	4.2	4.2	4.2	3.2	3.2	2.1	1.1	1.1
85°	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	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: P644108

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2
2.5°	320.2	320.2	320.2	320.2	320.2	320.2	319.2	320.2	320.2	320.2	319.2
5°	319.2	318.1	318.1	319.2	318.1	318.1	319.2	319.2	319.2	318.1	318.1
7.5°	314.9	316.0	314.9	314.9	316.0	316.0	316.0	316.0	314.9	314.9	316.0
10°	311.8	311.8	310.7	311.8	310.7	311.8	311.8	311.8	311.8	311.8	311.8
12.5°	306.5	306.5	306.5	307.5	306.5	306.5	307.5	307.5	307.5	307.5	307.5
15°	300.1	300.1	301.2	300.1	301.2	301.2	301.2	301.2	301.2	301.2	302.2
17.5°	293.8	293.8	293.8	293.8	293.8	293.8	293.8	293.8	293.8	294.8	294.8
20°	286.4	286.4	286.4	286.4	286.4	285.3	286.4	286.4	287.4	287.4	287.4
22.5°	276.9	276.9	276.9	276.9	276.9	276.9	276.9	276.9	277.9	279.0	277.9
25°	267.4	267.4	267.4	267.4	267.4	267.4	267.4	268.4	268.4	268.4	269.5
27.5°	257.9	257.9	257.9	256.8	257.9	256.8	257.9	257.9	258.9	257.9	258.9
30°	247.3	246.2	246.2	246.2	246.2	247.3	246.2	246.2	247.3	248.3	247.3
32.5°	233.6	233.6	233.6	234.6	234.6	234.6	235.7	234.6	234.6	235.7	235.7
35°	220.9	220.9	220.9	221.9	221.9	221.9	221.9	223.0	223.0	223.0	224.0
37.5°	207.1	208.2	207.1	208.2	208.2	209.2	209.2	209.2	209.2	210.3	210.3
40°	194.5	193.4	194.5	194.5	194.5	194.5	194.5	194.5	195.5	196.6	196.6
42.5°	179.7	179.7	179.7	179.7	179.7	179.7	180.7	180.7	180.7	181.8	181.8
45°	164.9	163.8	163.8	163.8	163.8	164.9	163.8	164.9	164.9	165.9	165.9
47.5°	149.0	149.0	149.0	149.0	149.0	149.0	149.0	149.0	149.0	150.1	149.0
50°	135.3	134.2	133.2	133.2	132.1	133.2	132.1	132.1	132.1	133.2	132.1
52.5°	119.4	118.4	117.3	117.3	117.3	116.2	115.2	115.2	115.2	114.1	114.1
55°	105.7	104.6	102.5	103.6	101.5	100.4	100.4	99.3	98.3	98.3	97.2
57.5°	90.9	89.8	88.8	87.7	87.7	85.6	84.5	83.5	82.4	81.4	79.3
60°	78.2	76.1	74.0	74.0	72.9	71.9	69.7	67.6	66.6	64.5	63.4
62.5°	64.5	62.4	60.2	59.2	58.1	57.1	55.0	52.8	50.7	49.7	47.6
65°	51.8	49.7	47.6	46.5	45.4	43.3	41.2	39.1	37.0	34.9	33.8
67.5°	39.1	37.0	35.9	33.8	32.8	30.6	28.5	27.5	25.4	23.2	20.1
70°	28.5	26.4	24.3	23.2	22.2	20.1	19.0	16.9	14.8	13.7	11.6
72.5°	19.0	16.9	15.9	14.8	13.7	12.7	10.6	9.5	7.4	6.3	5.3
75°	11.6	10.6	9.5	8.5	7.4	6.3	5.3	4.2	3.2	2.1	1.1
77.5°	6.3	5.3	4.2	4.2	3.2	2.1	2.1	1.1	1.1	1.1	1.1
80°	3.2	2.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	1.1
82.5°	1.1	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: P644108

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2
2.5°	320.2	320.2	320.2	320.2	320.2	320.2	320.2	320.2
5°	319.2	319.2	318.1	319.2	318.1	318.1	318.1	319.2
7.5°	316.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0
10°	311.8	311.8	311.8	312.8	312.8	312.8	311.8	312.8
12.5°	307.5	307.5	307.5	308.6	307.5	308.6	307.5	308.6
15°	302.2	302.2	303.3	303.3	302.2	302.2	303.3	303.3
17.5°	294.8	295.9	295.9	295.9	295.9	295.9	295.9	297.0
20°	288.5	288.5	287.4	288.5	288.5	289.6	289.6	288.5
22.5°	277.9	280.1	280.1	280.1	280.1	280.1	280.1	280.1
25°	269.5	269.5	269.5	270.5	269.5	269.5	270.5	269.5
27.5°	258.9	260.0	258.9	260.0	260.0	260.0	260.0	260.0
30°	248.3	248.3	248.3	248.3	248.3	249.4	248.3	248.3
32.5°	235.7	236.7	236.7	236.7	237.8	236.7	236.7	237.8
35°	224.0	224.0	224.0	225.1	224.0	225.1	225.1	224.0
37.5°	210.3	211.4	210.3	211.4	211.4	211.4	211.4	211.4
40°	197.6	196.6	197.6	196.6	197.6	197.6	197.6	196.6
42.5°	181.8	182.8	182.8	182.8	182.8	182.8	182.8	181.8
45°	165.9	167.0	167.0	167.0	167.0	167.0	168.0	168.0
47.5°	149.0	151.1	151.1	151.1	150.1	152.2	151.1	151.1
50°	132.1	132.1	133.2	133.2	134.2	134.2	134.2	134.2
52.5°	115.2	114.1	115.2	115.2	116.2	115.2	116.2	115.2
55°	96.2	96.2	96.2	95.1	96.2	96.2	96.2	96.2
57.5°	79.3	78.2	77.1	76.1	76.1	76.1	75.0	76.1
60°	61.3	59.2	60.2	58.1	57.1	56.0	56.0	55.0
62.5°	45.4	43.3	42.3	41.2	39.1	37.0	37.0	35.9
65°	30.6	28.5	27.5	25.4	24.3	23.2	22.2	22.2
67.5°	19.0	16.9	16.9	15.9	14.8	13.7	12.7	12.7
70°	10.6	9.5	8.5	7.4	7.4	6.3	5.3	5.3
72.5°	4.2	3.2	3.2	2.1	2.1	2.1	2.1	1.1
75°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)