

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: P644110

Luminaire Tested: ML5615LSWW9FS1E - 592SC WW - 900LM - 5000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644110
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 - 5000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

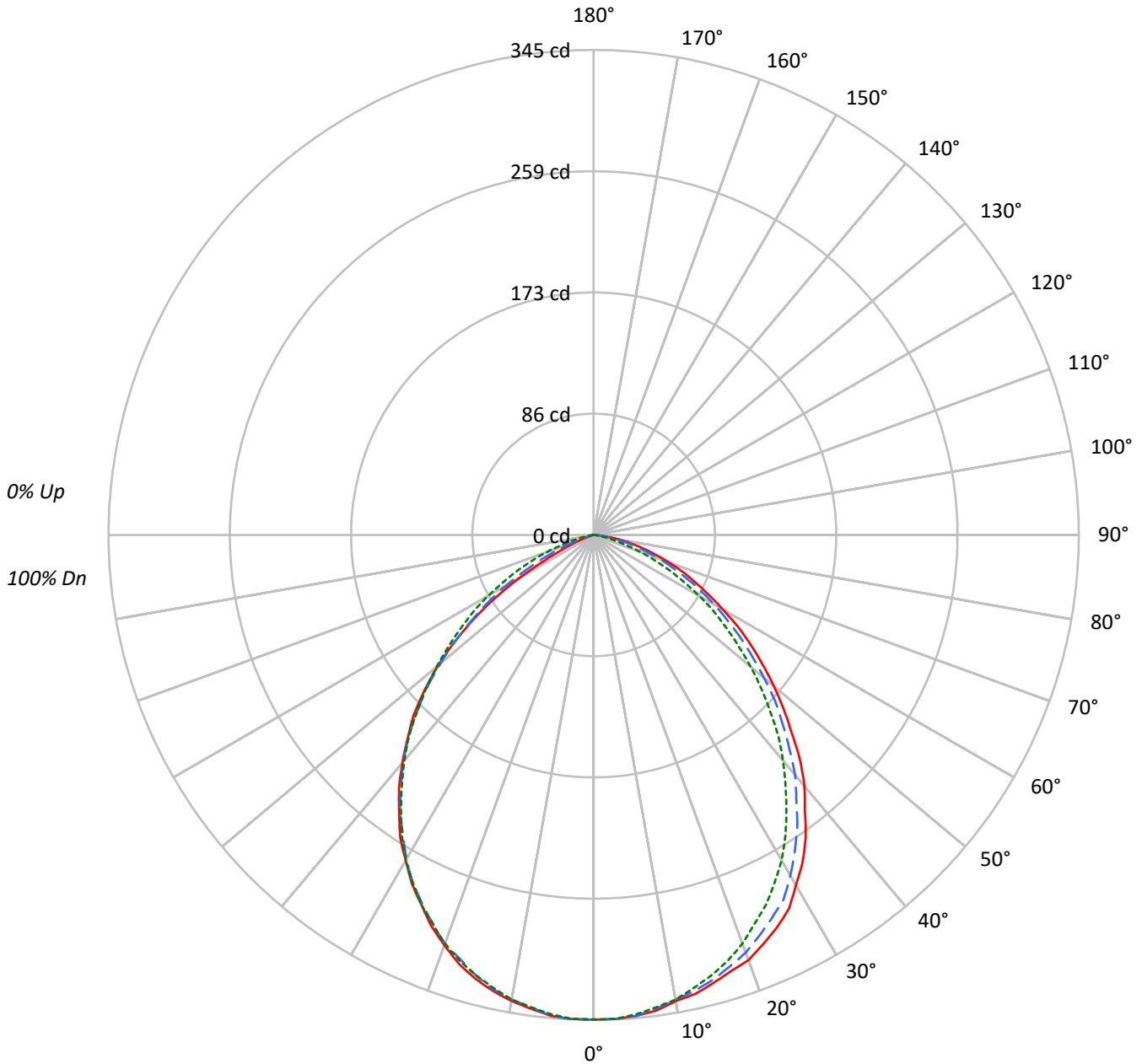
Lumens per Lamp: N/A
Luminaire Lumens: 737.3 lumens
Efficiency: N/A
Efficacy: 70.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.26
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

Input Watts (W): 10.5
Input Voltage (V): NR
Input Current (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: P644110
CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 5000K

Luminous Intensity Polar Plot





TEST NUMBER: P644110

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 5000K

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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°	27211	27211	27211	27211	27211
5°	27220	27220	27133	27220	27220
10°	26989	26901	26901	26901	26989
15°	26961	26773	26495	26495	26683
20°	27042	26563	25992	25992	26084
25°	26853	26157	25268	25164	25268
30°	26234	25505	24365	24265	24365
35°	25326	24333	23023	23129	23244
40°	24031	22980	21568	21682	21805
45°	22227	21211	19816	19816	20196
50°	20534	19416	17881	17464	17746
55°	18786	17534	15814	14561	14245
60°	16704	15630	13657	11320	9347
65°	14868	13598	11058	7434	4464
70°	13133	11563	8148	3670	1316
75°	10767	9028	4850	1037	336
80°	8274	6228	2091	0	0
85°	4166	3080	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 22350 cd/sqm



TEST NUMBER: P644110

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 5000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.5	4.4
10°-20°	91.9	12.5
20°-30°	135.5	18.4
30°-40°	153.4	20.8
40°-50°	141.7	19.2
50°-60°	104.7	14.2
60°-70°	56.3	7.6
70°-80°	18.8	2.6
80°-90°	2.4	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°	260.0	35.3
0°-40°	413.4	56.1
0°-60°	659.8	89.5
0°-90°	737.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	737.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	345	345	345	345	345	
5°	344	344	342	344	344	33
15°	330	328	324	324	326	93
25°	308	300	290	289	290	142
35°	263	252	239	240	241	164
45°	199	190	178	178	181	154
55°	136	127	115	106	104	122
65°	80	73	59	40	24	79
75°	35	30	16	3	1	38
85°	5	3	0	0	0	7
90°	0	0	0	0	0	



TEST NUMBER: P644110

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 5000K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7
2.5°	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7
5°	343.5	343.5	342.4	343.5	343.5	343.5	343.5	342.4	343.5	343.5	343.5
7.5°	341.3	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1
10°	336.7	336.7	336.7	336.7	336.7	336.7	336.7	336.7	336.7	336.7	335.6
12.5°	334.4	333.3	333.3	333.3	333.3	333.3	333.3	332.2	333.3	332.2	332.2
15°	329.9	329.9	329.9	329.9	329.9	329.9	328.7	328.7	328.7	328.7	327.6
17.5°	325.3	325.3	326.5	326.5	325.3	325.3	325.3	324.2	323.1	323.1	321.9
20°	321.9	321.9	320.8	320.8	319.6	320.8	319.6	318.5	318.5	317.4	316.2
22.5°	315.1	315.1	315.1	315.1	315.1	314.0	314.0	312.8	311.7	310.5	308.3
25°	308.3	308.3	308.3	308.3	307.1	307.1	307.1	304.9	303.7	302.6	300.3
27.5°	300.3	299.2	299.2	299.2	298.0	298.0	296.9	295.8	294.6	293.5	292.3
30°	287.8	287.8	287.8	287.8	286.7	285.5	285.5	284.4	283.2	281.0	279.8
32.5°	276.4	276.4	275.3	274.1	274.1	274.1	273.0	271.9	269.6	268.5	266.2
35°	262.8	261.6	261.6	260.5	260.5	260.5	259.4	257.1	255.9	254.8	252.5
37.5°	246.8	248.0	246.8	246.8	245.7	244.6	243.4	242.3	241.2	238.9	236.6
40°	233.2	233.2	232.1	230.9	229.8	229.8	228.6	227.5	226.4	225.2	223.0
42.5°	217.3	217.3	216.1	216.1	215.0	215.0	212.7	211.6	210.4	209.3	205.9
45°	199.1	199.1	200.2	199.1	197.9	196.8	196.8	195.7	193.4	192.2	190.0
47.5°	183.1	184.3	183.1	182.0	182.0	180.9	180.9	178.6	178.6	176.3	175.2
50°	167.2	167.2	167.2	167.2	166.1	164.9	164.9	163.8	161.5	160.4	158.1
52.5°	151.3	151.3	151.3	151.3	150.2	150.2	149.0	147.9	146.7	144.5	142.2
55°	136.5	135.4	135.4	135.4	134.2	134.2	133.1	132.0	130.8	129.7	127.4
57.5°	121.7	120.6	120.6	119.4	119.4	118.3	118.3	117.2	116.0	113.8	112.6
60°	105.8	106.9	105.8	105.8	104.7	104.7	104.7	103.5	101.2	100.1	99.0
62.5°	92.1	93.3	92.1	91.0	91.0	91.0	91.0	88.7	87.6	86.5	85.3
65°	79.6	79.6	79.6	78.5	78.5	78.5	76.2	76.2	75.1	73.9	72.8
67.5°	68.3	67.1	67.1	67.1	66.0	66.0	64.8	64.8	62.6	62.6	60.3
70°	56.9	55.7	55.7	55.7	54.6	53.5	54.6	52.3	51.2	50.1	50.1
72.5°	45.5	45.5	44.4	44.4	44.4	43.2	43.2	42.1	41.0	39.8	38.7
75°	35.3	35.3	35.3	34.1	34.1	33.0	33.0	31.9	31.9	29.6	29.6
77.5°	26.2	26.2	26.2	25.0	25.0	25.0	23.9	23.9	22.8	21.6	20.5
80°	18.2	17.1	17.1	17.1	17.1	15.9	15.9	15.9	14.8	14.8	13.7
82.5°	10.2	10.2	10.2	10.2	10.2	10.2	9.1	9.1	9.1	8.0	8.0
85°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	3.4	3.4	3.4
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: P644110

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 5000K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7
2.5°	344.7	344.7	344.7	344.7	343.5	344.7	343.5	344.7	344.7	344.7	344.7
5°	343.5	342.4	342.4	342.4	343.5	343.5	342.4	342.4	342.4	342.4	342.4
7.5°	340.1	340.1	340.1	339.0	340.1	340.1	339.0	340.1	340.1	339.0	340.1
10°	336.7	336.7	335.6	335.6	335.6	335.6	335.6	335.6	334.4	335.6	335.6
12.5°	332.2	332.2	332.2	331.0	331.0	331.0	331.0	331.0	329.9	329.9	331.0
15°	327.6	327.6	326.5	326.5	326.5	325.3	325.3	325.3	325.3	324.2	324.2
17.5°	321.9	320.8	320.8	319.6	319.6	318.5	318.5	317.4	317.4	317.4	316.2
20°	315.1	314.0	312.8	312.8	311.7	311.7	310.5	310.5	309.4	309.4	308.3
22.5°	307.1	306.0	304.9	303.7	303.7	302.6	302.6	301.4	300.3	299.2	299.2
25°	300.3	298.0	296.9	295.8	293.5	293.5	292.3	292.3	291.2	290.1	288.9
27.5°	290.1	287.8	286.7	285.5	284.4	283.2	281.0	281.0	279.8	278.7	277.6
30°	277.6	276.4	274.1	273.0	271.9	271.9	269.6	267.3	267.3	267.3	266.2
32.5°	265.0	262.8	261.6	259.4	258.2	258.2	257.1	254.8	253.7	253.7	252.5
35°	251.4	249.1	246.8	245.7	244.6	243.4	242.3	241.2	240.0	238.9	237.7
37.5°	235.5	233.2	232.1	230.9	229.8	228.6	227.5	226.4	225.2	224.1	225.2
40°	220.7	218.4	216.1	215.0	213.9	213.9	212.7	211.6	210.4	209.3	209.3
42.5°	204.8	202.5	201.3	200.2	199.1	197.9	196.8	195.7	194.5	194.5	193.4
45°	187.7	186.6	184.3	183.1	182.0	182.0	179.7	178.6	178.6	177.5	177.5
47.5°	172.9	170.6	168.4	167.2	166.1	164.9	163.8	162.7	161.5	161.5	161.5
50°	155.8	154.7	152.4	151.3	150.2	150.2	149.0	147.9	146.7	145.6	145.6
52.5°	139.9	138.8	138.8	136.5	135.4	135.4	133.1	133.1	130.8	129.7	128.5
55°	126.3	124.0	122.9	120.6	120.6	119.4	118.3	117.2	116.0	114.9	113.8
57.5°	110.3	109.2	108.1	106.9	106.9	105.8	104.7	103.5	101.2	101.2	99.0
60°	97.8	95.6	94.4	93.3	92.1	92.1	91.0	89.9	87.6	86.5	85.3
62.5°	84.2	81.9	81.9	80.8	78.5	78.5	77.4	75.1	73.9	71.7	70.5
65°	71.7	70.5	68.3	67.1	67.1	66.0	63.7	62.6	61.4	59.2	56.9
67.5°	59.2	58.0	56.9	54.6	54.6	53.5	51.2	50.1	47.8	46.6	44.4
70°	47.8	46.6	45.5	43.2	43.2	42.1	41.0	38.7	36.4	35.3	33.0
72.5°	37.5	36.4	35.3	33.0	33.0	31.9	29.6	28.4	26.2	23.9	22.8
75°	28.4	27.3	25.0	23.9	22.8	22.8	20.5	19.3	18.2	15.9	14.8
77.5°	19.3	18.2	17.1	15.9	15.9	14.8	13.7	12.5	11.4	10.2	8.0
80°	12.5	11.4	10.2	10.2	9.1	9.1	8.0	6.8	5.7	4.6	3.4
82.5°	6.8	6.8	5.7	4.6	4.6	4.6	3.4	3.4	2.3	1.1	1.1
85°	2.3	2.3	2.3	2.3	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: P644110

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 5000K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7
2.5°	344.7	344.7	344.7	344.7	344.7	344.7	343.5	344.7	344.7	344.7	343.5
5°	343.5	342.4	342.4	343.5	342.4	342.4	343.5	343.5	343.5	342.4	342.4
7.5°	339.0	340.1	339.0	339.0	340.1	340.1	340.1	340.1	339.0	339.0	340.1
10°	335.6	335.6	334.4	335.6	334.4	335.6	335.6	335.6	335.6	335.6	335.6
12.5°	329.9	329.9	329.9	331.0	329.9	329.9	331.0	331.0	331.0	331.0	331.0
15°	323.1	323.1	324.2	323.1	324.2	324.2	324.2	324.2	324.2	324.2	325.3
17.5°	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2	317.4	317.4
20°	308.3	308.3	308.3	308.3	308.3	307.1	308.3	308.3	309.4	309.4	309.4
22.5°	298.0	298.0	298.0	298.0	298.0	298.0	298.0	298.0	299.2	300.3	299.2
25°	287.8	287.8	287.8	287.8	287.8	287.8	287.8	288.9	288.9	288.9	290.1
27.5°	277.6	277.6	277.6	276.4	277.6	276.4	277.6	277.6	278.7	277.6	278.7
30°	266.2	265.0	265.0	265.0	265.0	266.2	265.0	265.0	266.2	267.3	266.2
32.5°	251.4	251.4	251.4	252.5	252.5	252.5	253.7	252.5	252.5	253.7	253.7
35°	237.7	237.7	237.7	238.9	238.9	238.9	238.9	240.0	240.0	240.0	241.2
37.5°	223.0	224.1	223.0	224.1	224.1	225.2	225.2	225.2	225.2	226.4	226.4
40°	209.3	208.2	209.3	209.3	209.3	209.3	209.3	209.3	210.4	211.6	211.6
42.5°	193.4	193.4	193.4	193.4	193.4	193.4	194.5	194.5	194.5	195.7	195.7
45°	177.5	176.3	176.3	176.3	176.3	177.5	176.3	177.5	177.5	178.6	178.6
47.5°	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	161.5	160.4
50°	145.6	144.5	143.3	143.3	142.2	143.3	142.2	142.2	142.2	143.3	142.2
52.5°	128.5	127.4	126.3	126.3	126.3	125.1	124.0	124.0	124.0	122.9	122.9
55°	113.8	112.6	110.3	111.5	109.2	108.1	108.1	106.9	105.8	105.8	104.7
57.5°	97.8	96.7	95.6	94.4	94.4	92.1	91.0	89.9	88.7	87.6	85.3
60°	84.2	81.9	79.6	79.6	78.5	77.4	75.1	72.8	71.7	69.4	68.3
62.5°	69.4	67.1	64.8	63.7	62.6	61.4	59.2	56.9	54.6	53.5	51.2
65°	55.7	53.5	51.2	50.1	48.9	46.6	44.4	42.1	39.8	37.5	36.4
67.5°	42.1	39.8	38.7	36.4	35.3	33.0	30.7	29.6	27.3	25.0	21.6
70°	30.7	28.4	26.2	25.0	23.9	21.6	20.5	18.2	15.9	14.8	12.5
72.5°	20.5	18.2	17.1	15.9	14.8	13.7	11.4	10.2	8.0	6.8	5.7
75°	12.5	11.4	10.2	9.1	8.0	6.8	5.7	4.6	3.4	2.3	1.1
77.5°	6.8	5.7	4.6	4.6	3.4	2.3	2.3	1.1	1.1	1.1	1.1
80°	3.4	2.3	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: P644110

CATALOG NUMBER: ML5615LSWW9FS1E - 592SC WW - 900LM - 5000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7
2.5°	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7
5°	343.5	343.5	342.4	343.5	342.4	342.4	342.4	343.5
7.5°	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1
10°	335.6	335.6	335.6	336.7	336.7	336.7	335.6	336.7
12.5°	331.0	331.0	331.0	332.2	331.0	332.2	331.0	332.2
15°	325.3	325.3	326.5	326.5	325.3	325.3	326.5	326.5
17.5°	317.4	318.5	318.5	318.5	318.5	318.5	318.5	319.6
20°	310.5	310.5	309.4	310.5	310.5	311.7	311.7	310.5
22.5°	299.2	301.4	301.4	301.4	301.4	301.4	301.4	301.4
25°	290.1	290.1	290.1	291.2	290.1	290.1	291.2	290.1
27.5°	278.7	279.8	278.7	279.8	279.8	279.8	279.8	279.8
30°	267.3	267.3	267.3	267.3	267.3	268.5	267.3	267.3
32.5°	253.7	254.8	254.8	254.8	255.9	254.8	254.8	255.9
35°	241.2	241.2	241.2	242.3	241.2	242.3	242.3	241.2
37.5°	226.4	227.5	226.4	227.5	227.5	227.5	227.5	227.5
40°	212.7	211.6	212.7	211.6	212.7	212.7	212.7	211.6
42.5°	195.7	196.8	196.8	196.8	196.8	196.8	196.8	195.7
45°	178.6	179.7	179.7	179.7	179.7	179.7	180.9	180.9
47.5°	160.4	162.7	162.7	162.7	161.5	163.8	162.7	162.7
50°	142.2	142.2	143.3	143.3	144.5	144.5	144.5	144.5
52.5°	124.0	122.9	124.0	124.0	125.1	124.0	125.1	124.0
55°	103.5	103.5	103.5	102.4	103.5	103.5	103.5	103.5
57.5°	85.3	84.2	83.0	81.9	81.9	81.9	80.8	81.9
60°	66.0	63.7	64.8	62.6	61.4	60.3	60.3	59.2
62.5°	48.9	46.6	45.5	44.4	42.1	39.8	39.8	38.7
65°	33.0	30.7	29.6	27.3	26.2	25.0	23.9	23.9
67.5°	20.5	18.2	18.2	17.1	15.9	14.8	13.7	13.7
70°	11.4	10.2	9.1	8.0	8.0	6.8	5.7	5.7
72.5°	4.6	3.4	3.4	2.3	2.3	2.3	2.3	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)