

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: P644124

Luminaire Tested: ML5615LSWW9FS1E - 592W WW - 900LM - 4000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644124
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-116)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5615LSWW9FS1E - 592W WW - 900LM - 4000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

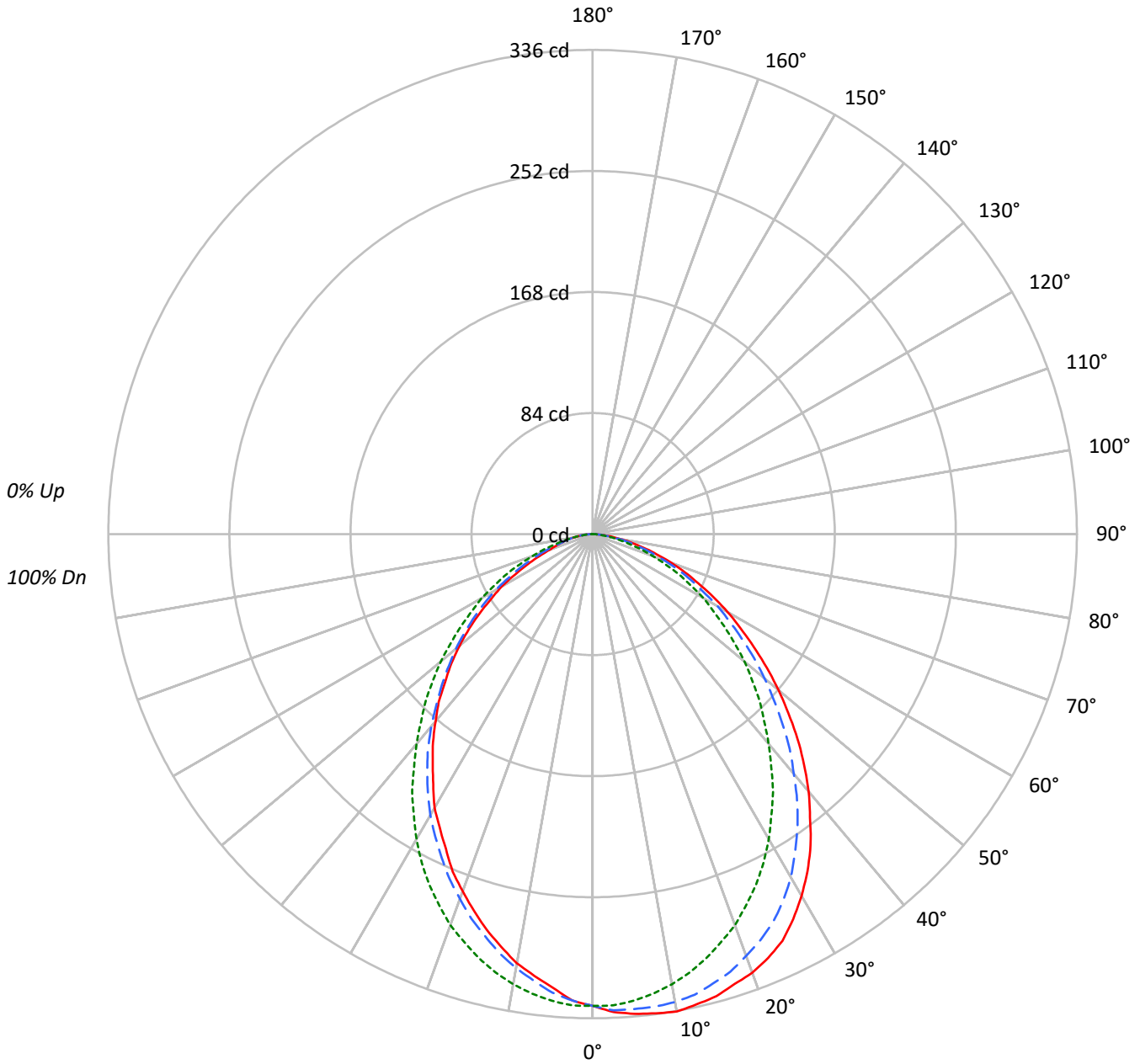
Lumens per Lamp: N/A
Luminaire Lumens: 714.3 lumens
Efficiency: N/A
Efficacy: 68.0 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.23
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

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: P644124
CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 900LM - 4000K

Luminous Intensity Polar Plot





TEST NUMBER: P644124

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 900LM - 4000K

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																			
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	88	86																			
2	101	94	88	82	99	92	86	81	88	84	80	85	81	78	82	79	76	74																			
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66	64																			
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	55																			
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49																			
6	73	61	53	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43																			
7	68	56	47	41	67	55	47	41	53	46	41	52	45	41	51	45	40	39																			
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35																			
9	60	47	39	34	58	46	39	34	45	38	34	44	38	33	43	37	33	32																			
10	56	43	36	31	55	43	36	31	42	35	31	41	35	31	40	35	30	29																			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	25845	25845	25845	25845	25845
5°	26483	26213	25762	25318	25041
10°	26973	26428	25426	24513	24240
15°	27133	26389	24902	23602	23226
20°	27218	26168	24261	22632	22153
25°	27132	25843	23369	21584	20992
30°	26425	25076	22278	20519	19999
35°	25413	23880	21037	19283	18628
40°	24021	22372	19569	17920	17457
45°	22462	20810	18275	16500	16121
50°	20669	19122	16899	15216	14799
55°	18773	17369	15332	13763	13144
60°	17051	15788	14004	12204	11494
65°	15074	14009	12309	10404	9340
70°	13387	12071	10225	8401	7340
75°	11102	10065	7961	6588	6588
80°	8774	7774	6183	5683	5683
85°	5163	5163	4076	5163	5163

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 22462 cd/sqm



TEST NUMBER: P644124

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 900LM - 4000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.8	4.3
10°-20°	86.2	12.1
20°-30°	125.1	17.5
30°-40°	139.6	19.5
40°-50°	129.4	18.1
50°-60°	101.7	14.2
60°-70°	65.1	9.1
70°-80°	29.9	4.2
80°-90°	6.4	0.9
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°	242.1	33.9
0°-40°	381.7	53.4
0°-60°	612.8	85.8
0°-90°	714.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	714.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	327	327	327	327	327	
5°	334	331	325	320	316	32
15°	332	323	305	289	284	94
25°	312	297	268	248	241	143
35°	264	248	218	200	193	164
45°	201	186	164	148	144	155
55°	136	126	111	100	96	122
65°	81	75	66	56	50	81
75°	36	33	26	22	22	39
85°	6	6	4	6	6	8
90°	0	0	0	0	0	



TEST NUMBER: P644124

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 900LM - 4000K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4
2.5°	332.0	332.0	332.0	332.0	332.0	332.0	330.8	330.8	330.8	330.8	330.8
5°	334.2	334.2	334.2	334.2	333.1	333.1	333.1	333.1	332.0	332.0	330.8
7.5°	335.4	335.4	335.4	334.2	334.2	334.2	333.1	333.1	333.1	332.0	330.8
10°	336.5	335.4	335.4	334.2	334.2	334.2	333.1	333.1	332.0	330.8	329.7
12.5°	334.2	334.2	334.2	334.2	333.1	333.1	332.0	330.8	329.7	328.5	327.4
15°	332.0	332.0	332.0	330.8	329.7	329.7	328.5	327.4	326.3	325.1	322.9
17.5°	327.4	328.5	327.4	327.4	326.3	326.3	325.1	324.0	321.7	320.6	318.3
20°	324.0	322.9	322.9	322.9	321.7	320.6	319.5	318.3	316.0	314.9	311.5
22.5°	318.3	318.3	317.2	316.0	314.9	314.9	313.8	311.5	310.4	308.1	304.7
25°	311.5	310.4	310.4	309.2	308.1	308.1	305.8	304.7	302.4	299.0	296.7
27.5°	301.3	301.3	301.3	300.1	299.0	297.9	296.7	294.4	293.3	288.8	286.5
30°	289.9	289.9	288.8	288.8	286.5	286.5	285.3	283.1	280.8	277.4	275.1
32.5°	277.4	277.4	277.4	275.1	274.0	272.8	271.7	270.6	267.2	263.7	261.5
35°	263.7	263.7	262.6	261.5	260.3	259.2	258.1	255.8	253.5	251.2	247.8
37.5°	247.8	249.0	247.8	246.7	245.6	244.4	243.3	242.1	238.7	236.5	233.1
40°	233.1	233.1	231.9	230.8	229.6	229.6	228.5	226.2	224.0	220.5	217.1
42.5°	217.1	217.1	216.0	214.9	214.9	213.7	211.5	210.3	208.0	205.8	202.4
45°	201.2	200.1	198.9	198.9	197.8	196.7	196.7	194.4	192.1	188.7	186.4
47.5°	184.2	184.2	183.0	183.0	181.9	180.8	180.8	178.5	175.1	172.8	170.5
50°	168.3	168.3	167.1	167.1	166.0	164.8	163.7	162.6	160.3	158.0	155.7
52.5°	152.3	152.3	152.3	150.1	148.9	148.9	148.9	146.7	145.5	143.2	141.0
55°	136.4	136.4	136.4	135.3	134.1	134.1	134.1	131.9	130.7	128.5	126.2
57.5°	121.6	121.6	121.6	120.5	120.5	119.4	118.2	117.1	116.0	114.8	112.5
60°	108.0	108.0	106.9	105.7	106.9	105.7	104.6	103.5	102.3	101.2	100.0
62.5°	94.4	94.4	94.4	93.2	92.1	92.1	92.1	90.9	88.7	87.5	86.4
65°	80.7	80.7	80.7	80.7	79.6	79.6	78.4	77.3	77.3	76.2	75.0
67.5°	69.3	69.3	68.2	68.2	67.1	67.1	67.1	65.9	64.8	64.8	63.7
70°	58.0	56.8	56.8	56.8	55.7	55.7	55.7	54.6	54.6	53.4	52.3
72.5°	46.6	46.6	46.6	46.6	45.5	45.5	44.3	44.3	43.2	43.2	42.1
75°	36.4	36.4	36.4	36.4	35.2	35.2	35.2	35.2	34.1	34.1	33.0
77.5°	27.3	27.3	27.3	27.3	27.3	27.3	26.1	26.1	26.1	25.0	25.0
80°	19.3	19.3	19.3	19.3	18.2	18.2	18.2	18.2	18.2	17.1	17.1
82.5°	12.5	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	10.2
85°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
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: P644124

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 900LM - 4000K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4
2.5°	329.7	329.7	329.7	329.7	328.5	328.5	328.5	327.4	327.4	327.4	327.4
5°	330.8	330.8	328.5	328.5	328.5	328.5	327.4	327.4	326.3	325.1	324.0
7.5°	329.7	329.7	328.5	327.4	326.3	326.3	325.1	324.0	322.9	321.7	320.6
10°	328.5	327.4	326.3	325.1	324.0	322.9	321.7	320.6	318.3	317.2	316.0
12.5°	326.3	324.0	322.9	320.6	320.6	319.5	317.2	316.0	313.8	311.5	310.4
15°	321.7	319.5	317.2	314.9	314.9	312.6	310.4	309.2	306.9	304.7	302.4
17.5°	316.0	313.8	311.5	309.2	308.1	305.8	303.5	301.3	299.0	296.7	294.4
20°	310.4	306.9	304.7	301.3	300.1	299.0	295.6	293.3	291.0	288.8	285.3
22.5°	302.4	300.1	295.6	293.3	292.2	289.9	287.6	284.2	280.8	278.5	276.3
25°	293.3	291.0	287.6	284.2	281.9	280.8	277.4	274.0	271.7	268.3	266.0
27.5°	283.1	279.7	277.4	272.8	271.7	269.4	266.0	262.6	260.3	256.9	253.5
30°	271.7	268.3	264.9	261.5	259.2	258.1	254.7	251.2	247.8	244.4	242.1
32.5°	258.1	254.7	251.2	249.0	245.6	243.3	241.0	237.6	234.2	230.8	228.5
35°	244.4	241.0	237.6	234.2	231.9	231.9	227.4	224.0	220.5	218.3	214.9
37.5°	229.6	226.2	222.8	219.4	218.3	216.0	212.6	209.2	206.9	203.5	201.2
40°	214.9	210.3	208.0	204.6	203.5	201.2	198.9	195.5	193.3	189.9	187.6
42.5°	198.9	196.7	193.3	191.0	188.7	187.6	184.2	180.8	178.5	176.2	175.1
45°	184.2	180.8	177.3	175.1	173.9	171.7	170.5	167.1	164.8	163.7	161.4
47.5°	168.3	166.0	163.7	160.3	159.2	158.0	155.7	154.6	152.3	150.1	147.8
50°	153.5	151.2	148.9	146.7	145.5	145.5	142.1	139.8	138.7	137.6	135.3
52.5°	138.7	136.4	134.1	131.9	131.9	130.7	128.5	127.3	126.2	123.9	121.6
55°	125.1	122.8	120.5	119.4	118.2	118.2	116.0	114.8	112.5	111.4	110.3
57.5°	111.4	109.1	108.0	106.9	105.7	105.7	103.5	102.3	101.2	98.9	98.9
60°	98.9	96.6	95.5	94.4	93.2	92.1	92.1	89.8	88.7	88.7	86.4
62.5°	85.3	84.1	83.0	81.9	80.7	80.7	79.6	78.4	77.3	76.2	75.0
65°	73.9	72.8	71.6	70.5	69.3	69.3	68.2	67.1	65.9	65.9	63.7
67.5°	62.5	61.4	60.3	59.1	59.1	58.0	56.8	56.8	55.7	54.6	53.4
70°	51.2	51.2	50.0	48.9	48.9	47.7	46.6	46.6	45.5	44.3	43.2
72.5°	42.1	40.9	39.8	39.8	38.7	38.7	37.5	37.5	36.4	35.2	34.1
75°	31.8	30.7	30.7	30.7	29.6	29.6	29.6	28.4	27.3	26.1	26.1
77.5°	23.9	23.9	22.7	21.6	21.6	21.6	20.5	20.5	20.5	19.3	19.3
80°	17.1	15.9	15.9	14.8	14.8	14.8	14.8	13.6	13.6	13.6	12.5
82.5°	10.2	10.2	10.2	9.1	9.1	9.1	9.1	9.1	8.0	8.0	8.0
85°	5.7	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.3	2.3
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: P644124

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 900LM - 4000K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4
2.5°	326.3	326.3	325.1	325.1	325.1	325.1	325.1	324.0	324.0	324.0	324.0
5°	324.0	322.9	321.7	321.7	321.7	320.6	320.6	319.5	319.5	318.3	318.3
7.5°	319.5	318.3	317.2	317.2	316.0	316.0	313.8	313.8	312.6	311.5	311.5
10°	313.8	312.6	311.5	310.4	310.4	308.1	308.1	306.9	305.8	304.7	304.7
12.5°	308.1	306.9	304.7	303.5	303.5	302.4	300.1	299.0	297.9	296.7	295.6
15°	300.1	299.0	296.7	295.6	294.4	293.3	292.2	291.0	288.8	287.6	287.6
17.5°	292.2	291.0	287.6	286.5	286.5	284.2	283.1	280.8	279.7	278.5	277.4
20°	283.1	280.8	278.5	277.4	276.3	274.0	272.8	271.7	269.4	268.3	267.2
22.5°	272.8	270.6	268.3	267.2	266.0	263.7	262.6	260.3	259.2	258.1	256.9
25°	262.6	260.3	258.1	256.9	254.7	253.5	251.2	249.0	247.8	246.7	245.6
27.5°	251.2	249.0	245.6	244.4	243.3	242.1	239.9	237.6	236.5	234.2	234.2
30°	238.7	236.5	234.2	233.1	231.9	229.6	228.5	226.2	225.1	222.8	222.8
32.5°	226.2	222.8	220.5	219.4	218.3	217.1	214.9	213.7	212.6	211.5	210.3
35°	212.6	210.3	208.0	206.9	205.8	203.5	202.4	201.2	200.1	197.8	197.8
37.5°	198.9	196.7	194.4	193.3	193.3	191.0	189.9	187.6	187.6	185.3	185.3
40°	185.3	183.0	180.8	180.8	179.6	177.3	176.2	175.1	173.9	172.8	172.8
42.5°	172.8	169.4	168.3	168.3	166.0	164.8	163.7	162.6	160.3	160.3	160.3
45°	159.2	156.9	155.7	154.6	153.5	152.3	151.2	148.9	147.8	146.7	146.7
47.5°	146.7	144.4	143.2	142.1	141.0	139.8	138.7	137.6	135.3	135.3	134.1
50°	134.1	131.9	130.7	129.6	128.5	127.3	126.2	125.1	123.9	122.8	121.6
52.5°	120.5	119.4	118.2	117.1	117.1	114.8	113.7	112.5	111.4	111.4	109.1
55°	109.1	108.0	106.9	105.7	104.6	103.5	102.3	101.2	100.0	98.9	97.8
57.5°	96.6	95.5	94.4	94.4	93.2	92.1	90.9	89.8	88.7	87.5	86.4
60°	85.3	84.1	83.0	83.0	81.9	80.7	79.6	79.6	77.3	76.2	75.0
62.5°	73.9	72.8	71.6	71.6	70.5	70.5	69.3	68.2	65.9	65.9	64.8
65°	63.7	62.5	61.4	60.3	60.3	59.1	58.0	56.8	55.7	55.7	54.6
67.5°	53.4	52.3	51.2	51.2	50.0	48.9	47.7	46.6	45.5	45.5	44.3
70°	43.2	42.1	40.9	40.9	39.8	38.7	38.7	37.5	36.4	35.2	35.2
72.5°	33.0	33.0	31.8	31.8	30.7	30.7	29.6	28.4	28.4	27.3	26.1
75°	25.0	25.0	23.9	23.9	22.7	22.7	21.6	21.6	21.6	20.5	21.6
77.5°	18.2	18.2	17.1	17.1	17.1	15.9	15.9	15.9	17.1	17.1	17.1
80°	12.5	12.5	12.5	12.5	11.4	11.4	12.5	12.5	12.5	12.5	12.5
82.5°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	9.1	9.1	9.1
85°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	5.7	5.7	5.7	5.7
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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: P644124

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 900LM - 4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	327.4	327.4	327.4	327.4	327.4	327.4	327.4	327.4
2.5°	322.9	322.9	322.9	322.9	322.9	322.9	322.9	324.0
5°	317.2	317.2	317.2	317.2	317.2	317.2	317.2	316.0
7.5°	311.5	310.4	310.4	310.4	310.4	309.2	309.2	309.2
10°	303.5	303.5	302.4	302.4	302.4	302.4	301.3	302.4
12.5°	295.6	294.4	294.4	294.4	293.3	293.3	293.3	293.3
15°	286.5	285.3	285.3	285.3	284.2	284.2	284.2	284.2
17.5°	276.3	276.3	275.1	275.1	274.0	274.0	274.0	274.0
20°	266.0	266.0	266.0	264.9	264.9	264.9	263.7	263.7
22.5°	255.8	254.7	253.5	254.7	253.5	252.4	253.5	253.5
25°	244.4	243.3	242.1	242.1	242.1	242.1	241.0	241.0
27.5°	233.1	230.8	230.8	230.8	230.8	229.6	229.6	229.6
30°	221.7	220.5	220.5	219.4	218.3	218.3	218.3	219.4
32.5°	209.2	208.0	206.9	206.9	206.9	206.9	205.8	205.8
35°	196.7	196.7	195.5	195.5	195.5	194.4	194.4	193.3
37.5°	184.2	184.2	183.0	183.0	183.0	181.9	181.9	181.9
40°	171.7	170.5	170.5	171.7	170.5	170.5	169.4	169.4
42.5°	159.2	159.2	158.0	158.0	158.0	158.0	156.9	158.0
45°	145.5	145.5	145.5	145.5	145.5	145.5	144.4	144.4
47.5°	134.1	133.0	133.0	133.0	133.0	133.0	133.0	133.0
50°	121.6	120.5	120.5	120.5	120.5	120.5	120.5	120.5
52.5°	109.1	108.0	108.0	108.0	108.0	108.0	108.0	108.0
55°	97.8	96.6	96.6	95.5	96.6	95.5	95.5	95.5
57.5°	86.4	85.3	84.1	85.3	84.1	84.1	84.1	83.0
60°	75.0	73.9	73.9	73.9	72.8	71.6	71.6	72.8
62.5°	63.7	63.7	62.5	62.5	61.4	60.3	60.3	60.3
65°	53.4	52.3	52.3	51.2	51.2	50.0	50.0	50.0
67.5°	43.2	43.2	42.1	42.1	40.9	40.9	40.9	39.8
70°	34.1	34.1	33.0	33.0	33.0	31.8	31.8	31.8
72.5°	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
75°	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6
77.5°	17.1	17.1	17.1	17.1	17.1	17.1	17.1	18.2
80°	12.5	12.5	13.6	12.5	13.6	12.5	12.5	12.5
82.5°	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
85°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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)