

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: P642291

Luminaire Tested: ML5612LSWW97FS1E - 592SC WW - 900LM - 2700K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642291
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: ML5612LSWW97FS1E - 592SC WW - 900LM - 2700K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 707.3 lumens
Efficiency: N/A
Efficacy: 53.2 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

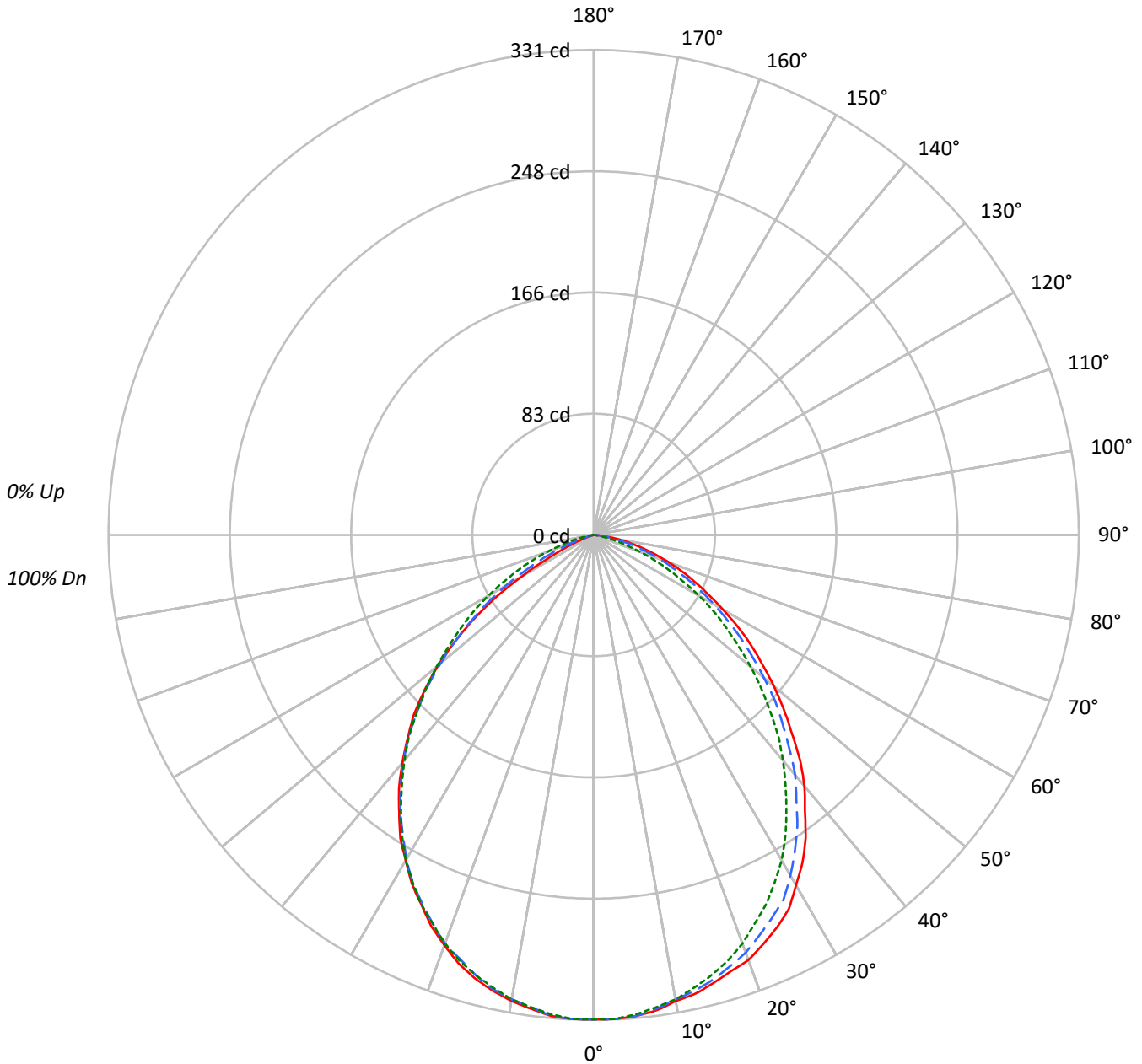
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	26106	26106	26106	26106	26106
5°	26118	26118	26031	26118	26118
10°	25891	25803	25803	25803	25891
15°	25866	25686	25417	25417	25596
20°	25941	25488	24933	24933	25026
25°	25756	25094	24240	24145	24240
30°	25167	24475	23372	23281	23372
35°	24295	23350	22088	22194	22290
40°	23052	22042	20692	20806	20919
45°	21323	20341	19001	19001	19369
50°	19699	18630	17157	16751	17022
55°	18029	16818	15167	13969	13667
60°	16025	14983	13088	10846	8952
65°	14271	13038	10591	7135	4277
70°	12602	11079	7801	3531	1269
75°	10309	8662	4667	1007	336
80°	7956	5955	2000	0	0
85°	3985	2989	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 21446 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.2	4.4
10°-20°	88.2	12.5
20°-30°	130.0	18.4
30°-40°	147.2	20.8
40°-50°	135.9	19.2
50°-60°	100.4	14.2
60°-70°	54.0	7.6
70°-80°	18.1	2.6
80°-90°	2.3	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°	249.4	35.3
0°-40°	396.6	56.1
0°-60°	633.0	89.5
0°-90°	707.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	707.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	331	331	331	331	331	
5°	330	330	328	330	330	31
15°	316	314	311	311	313	89
25°	296	288	278	277	278	136
35°	252	242	229	230	231	157
45°	191	182	170	170	174	148
55°	131	122	110	102	99	117
65°	76	70	57	38	23	76
75°	34	28	15	3	1	37
85°	4	3	0	0	0	7
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7
2.5°	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7
5°	329.6	329.6	328.5	329.6	329.6	329.6	329.6	328.5	329.6	329.6	329.6
7.5°	327.4	326.3	326.3	326.3	326.3	326.3	326.3	326.3	326.3	326.3	326.3
10°	323.0	323.0	323.0	323.0	323.0	323.0	323.0	323.0	323.0	323.0	321.9
12.5°	320.8	319.7	319.7	319.7	319.7	319.7	319.7	318.6	319.7	318.6	318.6
15°	316.5	316.5	316.5	316.5	316.5	316.5	315.4	315.4	315.4	315.4	314.3
17.5°	312.1	312.1	313.2	313.2	312.1	312.1	312.1	311.0	309.9	309.9	308.8
20°	308.8	308.8	307.7	307.7	306.6	307.7	306.6	305.6	305.6	304.5	303.4
22.5°	302.3	302.3	302.3	302.3	302.3	301.2	301.2	300.1	299.0	297.9	295.7
25°	295.7	295.7	295.7	295.7	294.6	294.6	294.6	292.5	291.4	290.3	288.1
27.5°	288.1	287.0	287.0	287.0	285.9	285.9	284.8	283.7	282.6	281.5	280.5
30°	276.1	276.1	276.1	276.1	275.0	273.9	273.9	272.8	271.7	269.5	268.5
32.5°	265.2	265.2	264.1	263.0	263.0	263.0	261.9	260.8	258.6	257.5	255.4
35°	252.1	251.0	251.0	249.9	249.9	249.9	248.8	246.6	245.5	244.4	242.3
37.5°	236.8	237.9	236.8	236.8	235.7	234.6	233.5	232.4	231.3	229.2	227.0
40°	223.7	223.7	222.6	221.5	220.4	220.4	219.3	218.3	217.2	216.1	213.9
42.5°	208.4	208.4	207.3	207.3	206.2	206.2	204.1	203.0	201.9	200.8	197.5
45°	191.0	191.0	192.1	191.0	189.9	188.8	188.8	187.7	185.5	184.4	182.2
47.5°	175.7	176.8	175.7	174.6	174.6	173.5	173.5	171.3	171.3	169.1	168.1
50°	160.4	160.4	160.4	160.4	159.3	158.2	158.2	157.1	155.0	153.9	151.7
52.5°	145.1	145.1	145.1	145.1	144.0	144.0	143.0	141.9	140.8	138.6	136.4
55°	131.0	129.9	129.9	129.9	128.8	128.8	127.7	126.6	125.5	124.4	122.2
57.5°	116.8	115.7	115.7	114.6	114.6	113.5	113.5	112.4	111.3	109.1	108.0
60°	101.5	102.6	101.5	101.5	100.4	100.4	100.4	99.3	97.1	96.0	94.9
62.5°	88.4	89.5	88.4	87.3	87.3	87.3	87.3	85.1	84.0	82.9	81.8
65°	76.4	76.4	76.4	75.3	75.3	75.3	73.1	73.1	72.0	70.9	69.8
67.5°	65.5	64.4	64.4	64.4	63.3	63.3	62.2	62.2	60.0	60.0	57.8
70°	54.6	53.5	53.5	53.5	52.4	51.3	52.4	50.2	49.1	48.0	48.0
72.5°	43.7	43.7	42.6	42.6	42.6	41.5	41.5	40.4	39.3	38.2	37.1
75°	33.8	33.8	33.8	32.7	32.7	31.6	31.6	30.6	30.6	28.4	28.4
77.5°	25.1	25.1	25.1	24.0	24.0	24.0	22.9	22.9	21.8	20.7	19.6
80°	17.5	16.4	16.4	16.4	16.4	15.3	15.3	15.3	14.2	14.2	13.1
82.5°	9.8	9.8	9.8	9.8	9.8	9.8	8.7	8.7	8.7	7.6	7.6
85°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.3	3.3	3.3
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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7
2.5°	330.7	330.7	330.7	330.7	329.6	330.7	329.6	330.7	330.7	330.7	330.7
5°	329.6	328.5	328.5	328.5	329.6	329.6	328.5	328.5	328.5	328.5	328.5
7.5°	326.3	326.3	326.3	325.2	326.3	326.3	325.2	326.3	326.3	325.2	326.3
10°	323.0	323.0	321.9	321.9	321.9	321.9	321.9	321.9	320.8	321.9	321.9
12.5°	318.6	318.6	318.6	317.6	317.6	317.6	317.6	317.6	316.5	316.5	317.6
15°	314.3	314.3	313.2	313.2	313.2	312.1	312.1	312.1	312.1	311.0	311.0
17.5°	308.8	307.7	307.7	306.6	306.6	305.6	305.6	304.5	304.5	304.5	303.4
20°	302.3	301.2	300.1	300.1	299.0	299.0	297.9	297.9	296.8	296.8	295.7
22.5°	294.6	293.5	292.5	291.4	291.4	290.3	290.3	289.2	288.1	287.0	287.0
25°	288.1	285.9	284.8	283.7	281.5	281.5	280.5	280.5	279.4	278.3	277.2
27.5°	278.3	276.1	275.0	273.9	272.8	271.7	269.5	269.5	268.5	267.4	266.3
30°	266.3	265.2	263.0	261.9	260.8	260.8	258.6	256.4	256.4	256.4	255.4
32.5°	254.3	252.1	251.0	248.8	247.7	247.7	246.6	244.4	243.4	243.4	242.3
35°	241.2	239.0	236.8	235.7	234.6	233.5	232.4	231.3	230.3	229.2	228.1
37.5°	225.9	223.7	222.6	221.5	220.4	219.3	218.3	217.2	216.1	215.0	216.1
40°	211.7	209.5	207.3	206.2	205.2	205.2	204.1	203.0	201.9	200.8	200.8
42.5°	196.4	194.2	193.2	192.1	191.0	189.9	188.8	187.7	186.6	186.6	185.5
45°	180.1	179.0	176.8	175.7	174.6	174.6	172.4	171.3	171.3	170.2	170.2
47.5°	165.9	163.7	161.5	160.4	159.3	158.2	157.1	156.1	155.0	155.0	155.0
50°	149.5	148.4	146.2	145.1	144.0	144.0	143.0	141.9	140.8	139.7	139.7
52.5°	134.2	133.1	133.1	131.0	129.9	129.9	127.7	127.7	125.5	124.4	123.3
55°	121.1	118.9	117.9	115.7	115.7	114.6	113.5	112.4	111.3	110.2	109.1
57.5°	105.9	104.8	103.7	102.6	102.6	101.5	100.4	99.3	97.1	97.1	94.9
60°	93.8	91.7	90.6	89.5	88.4	88.4	87.3	86.2	84.0	82.9	81.8
62.5°	80.8	78.6	78.6	77.5	75.3	75.3	74.2	72.0	70.9	68.7	67.7
65°	68.7	67.7	65.5	64.4	64.4	63.3	61.1	60.0	58.9	56.7	54.6
67.5°	56.7	55.7	54.6	52.4	52.4	51.3	49.1	48.0	45.8	44.7	42.6
70°	45.8	44.7	43.7	41.5	41.5	40.4	39.3	37.1	34.9	33.8	31.6
72.5°	36.0	34.9	33.8	31.6	31.6	30.6	28.4	27.3	25.1	22.9	21.8
75°	27.3	26.2	24.0	22.9	21.8	21.8	19.6	18.6	17.5	15.3	14.2
77.5°	18.6	17.5	16.4	15.3	15.3	14.2	13.1	12.0	10.9	9.8	7.6
80°	12.0	10.9	9.8	9.8	8.7	8.7	7.6	6.5	5.5	4.4	3.3
82.5°	6.5	6.5	5.5	4.4	4.4	4.4	3.3	3.3	2.2	1.1	1.1
85°	2.2	2.2	2.2	2.2	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7
2.5°	330.7	330.7	330.7	330.7	330.7	330.7	329.6	330.7	330.7	330.7	329.6
5°	329.6	328.5	328.5	329.6	328.5	328.5	329.6	329.6	329.6	328.5	328.5
7.5°	325.2	326.3	325.2	325.2	326.3	326.3	326.3	326.3	325.2	325.2	326.3
10°	321.9	321.9	320.8	321.9	320.8	321.9	321.9	321.9	321.9	321.9	321.9
12.5°	316.5	316.5	316.5	317.6	316.5	316.5	317.6	317.6	317.6	317.6	317.6
15°	309.9	309.9	311.0	309.9	311.0	311.0	311.0	311.0	311.0	311.0	312.1
17.5°	303.4	303.4	303.4	303.4	303.4	303.4	303.4	303.4	303.4	304.5	304.5
20°	295.7	295.7	295.7	295.7	295.7	294.6	295.7	295.7	296.8	296.8	296.8
22.5°	285.9	285.9	285.9	285.9	285.9	285.9	285.9	285.9	287.0	288.1	287.0
25°	276.1	276.1	276.1	276.1	276.1	276.1	276.1	277.2	277.2	277.2	278.3
27.5°	266.3	266.3	266.3	265.2	266.3	265.2	266.3	266.3	267.4	266.3	267.4
30°	255.4	254.3	254.3	254.3	254.3	255.4	254.3	254.3	255.4	256.4	255.4
32.5°	241.2	241.2	241.2	242.3	242.3	242.3	243.4	242.3	242.3	243.4	243.4
35°	228.1	228.1	228.1	229.2	229.2	229.2	229.2	230.3	230.3	230.3	231.3
37.5°	213.9	215.0	213.9	215.0	215.0	216.1	216.1	216.1	216.1	217.2	217.2
40°	200.8	199.7	200.8	200.8	200.8	200.8	200.8	200.8	201.9	203.0	203.0
42.5°	185.5	185.5	185.5	185.5	185.5	185.5	186.6	186.6	186.6	187.7	187.7
45°	170.2	169.1	169.1	169.1	169.1	170.2	169.1	170.2	170.2	171.3	171.3
47.5°	153.9	153.9	153.9	153.9	153.9	153.9	153.9	153.9	153.9	155.0	153.9
50°	139.7	138.6	137.5	137.5	136.4	137.5	136.4	136.4	136.4	137.5	136.4
52.5°	123.3	122.2	121.1	121.1	121.1	120.0	118.9	118.9	118.9	117.9	117.9
55°	109.1	108.0	105.9	106.9	104.8	103.7	103.7	102.6	101.5	101.5	100.4
57.5°	93.8	92.8	91.7	90.6	90.6	88.4	87.3	86.2	85.1	84.0	81.8
60°	80.8	78.6	76.4	76.4	75.3	74.2	72.0	69.8	68.7	66.6	65.5
62.5°	66.6	64.4	62.2	61.1	60.0	58.9	56.7	54.6	52.4	51.3	49.1
65°	53.5	51.3	49.1	48.0	46.9	44.7	42.6	40.4	38.2	36.0	34.9
67.5°	40.4	38.2	37.1	34.9	33.8	31.6	29.5	28.4	26.2	24.0	20.7
70°	29.5	27.3	25.1	24.0	22.9	20.7	19.6	17.5	15.3	14.2	12.0
72.5°	19.6	17.5	16.4	15.3	14.2	13.1	10.9	9.8	7.6	6.5	5.5
75°	12.0	10.9	9.8	8.7	7.6	6.5	5.5	4.4	3.3	2.2	1.1
77.5°	6.5	5.5	4.4	4.4	3.3	2.2	2.2	1.1	1.1	1.1	1.1
80°	3.3	2.2	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: P642291

CATALOG NUMBER: ML5612LSWW97FS1E - 592SC WW - 900LM - 2700K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7
2.5°	330.7	330.7	330.7	330.7	330.7	330.7	330.7	330.7
5°	329.6	329.6	328.5	329.6	328.5	328.5	328.5	329.6
7.5°	326.3	326.3	326.3	326.3	326.3	326.3	326.3	326.3
10°	321.9	321.9	321.9	323.0	323.0	323.0	321.9	323.0
12.5°	317.6	317.6	317.6	318.6	317.6	318.6	317.6	318.6
15°	312.1	312.1	313.2	313.2	312.1	312.1	313.2	313.2
17.5°	304.5	305.6	305.6	305.6	305.6	305.6	305.6	306.6
20°	297.9	297.9	296.8	297.9	297.9	299.0	299.0	297.9
22.5°	287.0	289.2	289.2	289.2	289.2	289.2	289.2	289.2
25°	278.3	278.3	278.3	279.4	278.3	278.3	279.4	278.3
27.5°	267.4	268.5	267.4	268.5	268.5	268.5	268.5	268.5
30°	256.4	256.4	256.4	256.4	256.4	257.5	256.4	256.4
32.5°	243.4	244.4	244.4	244.4	245.5	244.4	244.4	245.5
35°	231.3	231.3	231.3	232.4	231.3	232.4	232.4	231.3
37.5°	217.2	218.3	217.2	218.3	218.3	218.3	218.3	218.3
40°	204.1	203.0	204.1	203.0	204.1	204.1	204.1	203.0
42.5°	187.7	188.8	188.8	188.8	188.8	188.8	188.8	187.7
45°	171.3	172.4	172.4	172.4	172.4	172.4	173.5	173.5
47.5°	153.9	156.1	156.1	156.1	155.0	157.1	156.1	156.1
50°	136.4	136.4	137.5	137.5	138.6	138.6	138.6	138.6
52.5°	118.9	117.9	118.9	118.9	120.0	118.9	120.0	118.9
55°	99.3	99.3	99.3	98.2	99.3	99.3	99.3	99.3
57.5°	81.8	80.8	79.7	78.6	78.6	78.6	77.5	78.6
60°	63.3	61.1	62.2	60.0	58.9	57.8	57.8	56.7
62.5°	46.9	44.7	43.7	42.6	40.4	38.2	38.2	37.1
65°	31.6	29.5	28.4	26.2	25.1	24.0	22.9	22.9
67.5°	19.6	17.5	17.5	16.4	15.3	14.2	13.1	13.1
70°	10.9	9.8	8.7	7.6	7.6	6.5	5.5	5.5
72.5°	4.4	3.3	3.3	2.2	2.2	2.2	2.2	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



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Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270°

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(END OF REPORT)