

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: P642351

Luminaire Tested: ML5612LSWW97FS1E - 692W WW - 900LM - 2700K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642351
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-117)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 692W WW - 900LM - 2700K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 715.3 lumens
Efficiency: N/A
Efficacy: 53.8 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.25
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

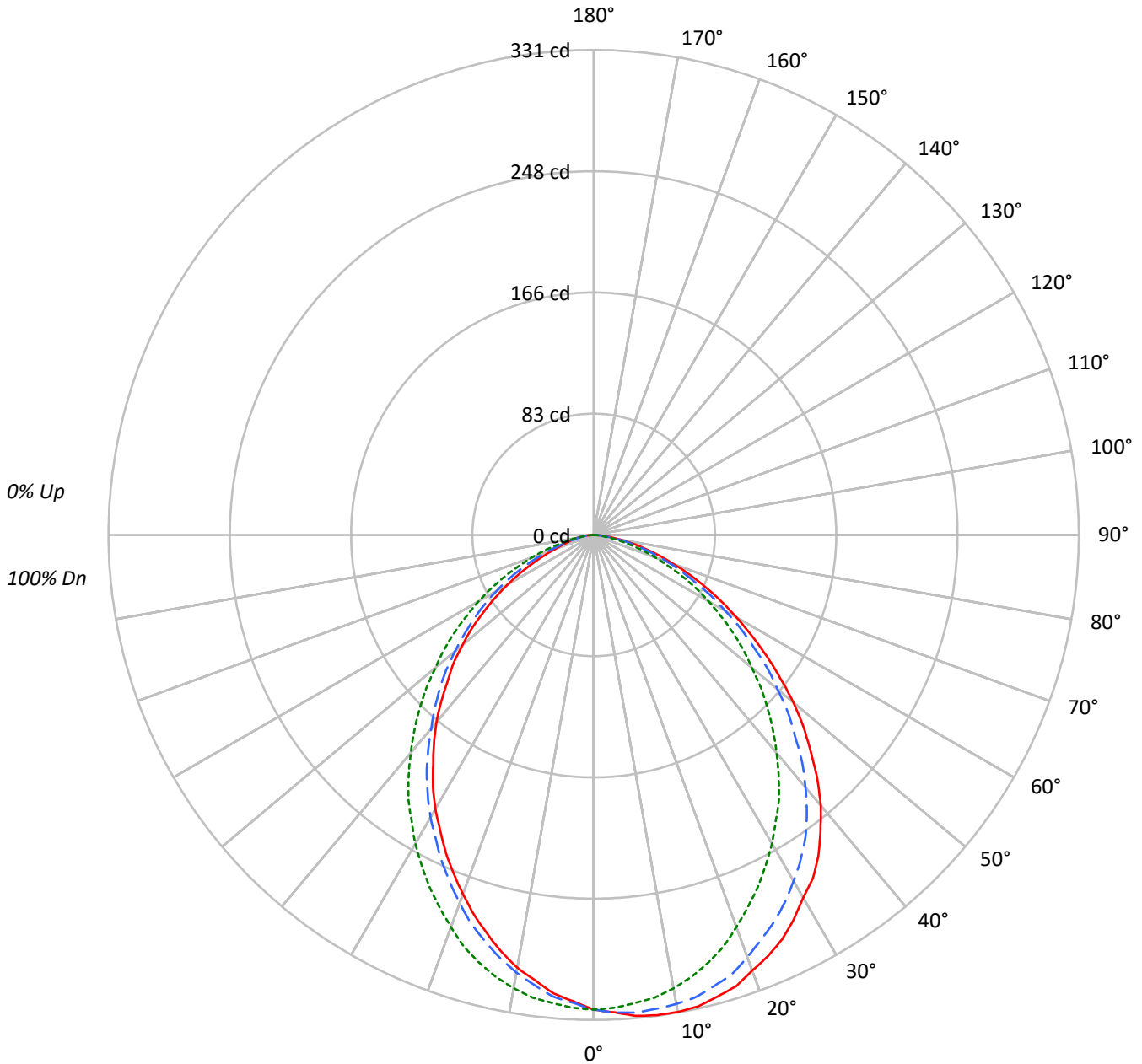
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100				
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87				87				
2	101	94	88	82	99	92	86	81	88	84	80	85	81	78	82	79	76	74				74				
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66	64				64				
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	55				55				
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49				49				
6	73	61	52	46	72	60	52	46	58	51	46	56	50	45	55	49	45	43				43				
7	68	55	47	41	67	55	47	41	53	46	41	52	45	41	50	45	40	38				38				
8	64	51	43	37	62	50	42	37	49	42	37	48	41	37	46	41	36	35				35				
9	60	47	39	34	58	46	39	34	45	38	33	44	38	33	43	37	33	31				31				
10	56	43	36	31	55	43	36	31	42	35	30	41	35	30	40	34	30	29				29				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	17762	17762	17762	17762	17762
5°	18132	18011	17653	17411	17290
10°	18403	18097	17490	16883	16700
15°	18513	18082	17151	16283	15976
20°	18458	17887	16615	15594	15215
25°	18412	17620	16035	14850	14450
30°	18098	17268	15401	14091	13673
35°	17889	16865	14750	13291	12776
40°	17254	16087	13897	12337	11944
45°	16242	15056	13025	11505	10908
50°	15164	13961	12000	10516	9953
55°	13763	12721	11058	9491	8755
60°	12324	11370	9933	8377	7412
65°	10896	9910	8639	7082	5941
70°	9264	8575	7165	5418	4376
75°	7625	6926	5316	3707	3707
80°	5840	5177	3788	3094	3441
85°	4088	3459	2768	2768	2768

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 16242 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.4	4.3
10°-20°	85.3	11.9
20°-30°	123.4	17.3
30°-40°	140.2	19.6
40°-50°	132.3	18.5
50°-60°	104.3	14.6
60°-70°	65.3	9.1
70°-80°	28.2	3.9
80°-90°	5.8	0.8
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°	239.1	33.4
0°-40°	379.3	53.0
0°-60°	615.9	86.1
0°-90°	715.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	715.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	324	324	324	324	324	
5°	330	327	321	316	314	31
15°	326	319	302	287	282	92
25°	304	291	265	246	239	140
35°	267	252	220	199	191	166
45°	210	194	168	148	141	162
55°	144	133	116	99	92	129
65°	84	76	67	55	46	84
75°	36	33	25	18	18	39
85°	6	6	4	4	4	8
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°	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0
2.5°	326.2	326.2	327.3	327.3	326.2	326.2	326.2	326.2	326.2	326.2	326.2
5°	329.5	329.5	329.5	329.5	328.4	328.4	328.4	328.4	328.4	327.3	327.3
7.5°	330.6	330.6	330.6	330.6	329.5	329.5	328.4	328.4	328.4	327.3	326.2
10°	330.6	330.6	330.6	329.5	329.5	328.4	329.5	328.4	327.3	326.2	325.1
12.5°	329.5	328.4	328.4	328.4	327.3	327.3	327.3	326.2	325.1	324.0	323.0
15°	326.2	326.2	326.2	325.1	325.1	324.0	324.0	323.0	321.9	319.7	318.6
17.5°	323.0	323.0	321.9	321.9	320.8	319.7	319.7	318.6	317.5	315.3	314.2
20°	316.4	316.4	316.4	315.3	314.2	314.2	313.1	312.0	309.9	307.7	306.6
22.5°	311.0	309.9	309.9	308.8	307.7	307.7	306.6	304.4	303.3	301.1	298.9
25°	304.4	303.3	303.3	302.2	301.1	300.0	300.0	297.9	295.7	293.5	291.3
27.5°	295.7	295.7	294.6	293.5	292.4	292.4	291.3	290.2	286.9	284.8	282.6
30°	285.9	286.9	285.9	284.8	283.7	283.7	282.6	280.4	278.2	274.9	272.8
32.5°	278.2	278.2	277.1	276.0	273.9	273.9	273.9	270.6	268.4	266.2	262.9
35°	267.3	267.3	267.3	265.1	264.0	262.9	261.9	259.7	257.5	255.3	252.0
37.5°	254.2	255.3	254.2	253.1	252.0	250.9	249.9	247.7	244.4	242.2	238.9
40°	241.1	241.1	240.0	238.9	237.9	236.8	235.7	233.5	231.3	228.0	224.8
42.5°	225.8	225.8	224.8	223.7	222.6	221.5	221.5	219.3	216.0	213.8	210.6
45°	209.5	209.5	209.5	208.4	207.3	206.2	205.1	204.0	201.8	198.6	194.2
47.5°	194.2	194.2	194.2	192.0	192.0	189.8	188.8	186.6	185.5	182.2	180.0
50°	177.8	176.8	176.8	175.7	174.6	173.5	173.5	170.2	169.1	166.9	163.7
52.5°	160.4	160.4	160.4	159.3	158.2	157.1	157.1	154.9	152.7	150.6	149.5
55°	144.0	144.0	144.0	142.9	141.8	141.8	140.7	138.6	137.5	135.3	133.1
57.5°	127.7	128.7	127.7	126.6	126.6	125.5	125.5	124.4	122.2	120.0	118.9
60°	112.4	112.4	112.4	111.3	110.2	110.2	110.2	109.1	106.9	105.8	103.7
62.5°	98.2	98.2	97.1	97.1	96.0	96.0	94.9	93.8	92.7	91.6	90.6
65°	84.0	82.9	82.9	82.9	81.8	81.8	81.8	80.7	78.6	77.5	76.4
67.5°	70.9	70.9	69.8	69.8	68.7	68.7	68.7	67.6	66.6	65.5	64.4
70°	57.8	57.8	57.8	57.8	56.7	56.7	56.7	55.6	54.6	54.6	53.5
72.5°	46.9	46.9	46.9	46.9	45.8	45.8	45.8	44.7	43.6	42.6	42.6
75°	36.0	37.1	36.0	36.0	36.0	36.0	34.9	34.9	33.8	32.7	32.7
77.5°	27.3	27.3	27.3	27.3	26.2	26.2	26.2	26.2	25.1	24.0	24.0
80°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	17.5	17.5	16.4
82.5°	10.9	12.0	12.0	12.0	10.9	10.9	10.9	10.9	10.9	10.9	9.8
85°	6.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
87.5°	2.2	2.2	2.2	2.2	2.2	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°	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0
2.5°	325.1	325.1	325.1	325.1	324.0	324.0	324.0	323.0	323.0	323.0	323.0
5°	326.2	325.1	325.1	324.0	324.0	324.0	323.0	323.0	321.9	320.8	320.8
7.5°	325.1	325.1	324.0	323.0	323.0	321.9	320.8	319.7	318.6	318.6	316.4
10°	324.0	323.0	321.9	320.8	319.7	319.7	317.5	316.4	315.3	314.2	313.1
12.5°	320.8	319.7	318.6	316.4	316.4	315.3	313.1	312.0	309.9	308.8	306.6
15°	316.4	315.3	314.2	312.0	311.0	309.9	307.7	305.5	303.3	302.2	300.0
17.5°	312.0	309.9	307.7	305.5	304.4	303.3	301.1	298.9	296.8	294.6	292.4
20°	304.4	302.2	300.0	296.8	295.7	294.6	291.3	289.1	286.9	284.8	282.6
22.5°	296.8	294.6	291.3	289.1	288.0	285.9	283.7	280.4	278.2	274.9	272.8
25°	289.1	285.9	282.6	280.4	278.2	277.1	273.9	271.7	267.3	265.1	262.9
27.5°	279.3	277.1	273.9	270.6	268.4	266.2	264.0	260.8	257.5	254.2	252.0
30°	269.5	266.2	262.9	260.8	257.5	256.4	253.1	249.9	246.6	243.3	241.1
32.5°	259.7	256.4	253.1	249.9	247.7	245.5	242.2	238.9	234.6	231.3	229.1
35°	248.8	245.5	241.1	237.9	235.7	233.5	230.2	226.9	223.7	220.4	217.1
37.5°	235.7	231.3	229.1	225.8	222.6	220.4	217.1	212.8	210.6	207.3	204.0
40°	221.5	218.2	214.9	211.7	208.4	207.3	202.9	199.7	197.5	194.2	190.9
42.5°	207.3	204.0	199.7	196.4	194.2	193.1	189.8	186.6	183.3	181.1	177.8
45°	192.0	188.8	185.5	182.2	180.0	178.9	175.7	173.5	170.2	168.0	164.7
47.5°	176.8	173.5	171.3	168.0	165.8	164.7	162.6	159.3	156.0	154.9	152.7
50°	161.5	158.2	156.0	152.7	151.7	150.6	148.4	146.2	144.0	140.7	139.7
52.5°	146.2	142.9	140.7	138.6	138.6	136.4	134.2	133.1	130.9	128.7	126.6
55°	130.9	129.8	127.7	124.4	124.4	123.3	121.1	118.9	116.7	115.7	113.5
57.5°	115.7	114.6	112.4	111.3	110.2	109.1	108.0	105.8	104.7	102.6	101.5
60°	102.6	101.5	99.3	98.2	97.1	96.0	94.9	92.7	91.6	90.6	89.5
62.5°	88.4	87.3	86.2	85.1	84.0	82.9	82.9	80.7	79.6	78.6	77.5
65°	76.4	74.2	73.1	72.0	72.0	70.9	69.8	68.7	67.6	66.6	65.5
67.5°	63.3	62.2	62.2	60.0	60.0	58.9	57.8	57.8	55.6	54.6	53.5
70°	52.4	51.3	50.2	49.1	49.1	48.0	46.9	45.8	44.7	44.7	43.6
72.5°	41.5	40.4	40.4	39.3	38.2	38.2	37.1	36.0	34.9	34.9	33.8
75°	31.6	30.5	30.5	29.5	29.5	28.4	27.3	27.3	26.2	25.1	24.0
77.5°	22.9	22.9	21.8	21.8	20.7	20.7	19.6	19.6	18.5	17.5	17.5
80°	16.4	15.3	15.3	14.2	14.2	14.2	13.1	13.1	12.0	12.0	10.9
82.5°	9.8	9.8	8.7	8.7	8.7	8.7	7.6	7.6	7.6	6.5	6.5
85°	5.5	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0
2.5°	321.9	321.9	320.8	321.9	320.8	320.8	320.8	320.8	319.7	319.7	319.7
5°	319.7	318.6	318.6	317.5	318.6	317.5	316.4	316.4	316.4	316.4	315.3
7.5°	315.3	315.3	314.2	313.1	313.1	312.0	311.0	311.0	309.9	309.9	308.8
10°	312.0	309.9	308.8	307.7	307.7	306.6	305.5	304.4	303.3	302.2	302.2
12.5°	304.4	303.3	302.2	301.1	301.1	298.9	297.9	296.8	295.7	294.6	293.5
15°	298.9	296.8	294.6	293.5	293.5	291.3	290.2	289.1	286.9	286.9	284.8
17.5°	290.2	288.0	285.9	284.8	283.7	282.6	281.5	279.3	278.2	276.0	276.0
20°	279.3	278.2	274.9	273.9	272.8	271.7	269.5	268.4	267.3	265.1	264.0
22.5°	270.6	267.3	265.1	264.0	264.0	260.8	259.7	257.5	256.4	255.3	253.1
25°	259.7	257.5	255.3	253.1	253.1	250.9	249.9	247.7	245.5	244.4	243.3
27.5°	248.8	246.6	243.3	242.2	241.1	240.0	237.9	235.7	233.5	232.4	231.3
30°	236.8	234.6	232.4	231.3	229.1	226.9	224.8	223.7	222.6	220.4	219.3
32.5°	225.8	222.6	220.4	218.2	218.2	214.9	213.8	211.7	210.6	209.5	207.3
35°	213.8	210.6	208.4	207.3	206.2	202.9	200.8	198.6	198.6	196.4	195.3
37.5°	200.8	197.5	196.4	194.2	193.1	190.9	188.8	187.7	185.5	183.3	183.3
40°	188.8	185.5	182.2	182.2	180.0	178.9	175.7	174.6	172.4	171.3	170.2
42.5°	175.7	172.4	170.2	169.1	168.0	165.8	163.7	161.5	160.4	159.3	158.2
45°	161.5	159.3	158.2	156.0	154.9	152.7	151.7	149.5	148.4	146.2	145.1
47.5°	149.5	147.3	145.1	144.0	142.9	140.7	139.7	137.5	136.4	134.2	133.1
50°	137.5	135.3	133.1	132.0	130.9	128.7	126.6	125.5	123.3	122.2	120.0
52.5°	124.4	122.2	120.0	120.0	118.9	116.7	115.7	113.5	111.3	109.1	108.0
55°	112.4	110.2	108.0	106.9	106.9	104.7	102.6	101.5	99.3	98.2	96.0
57.5°	99.3	97.1	96.0	94.9	94.9	92.7	91.6	89.5	88.4	86.2	85.1
60°	87.3	86.2	84.0	84.0	82.9	80.7	79.6	77.5	76.4	75.3	74.2
62.5°	75.3	74.2	72.0	72.0	70.9	69.8	68.7	66.6	65.5	63.3	62.2
65°	63.3	62.2	61.1	60.0	60.0	57.8	56.7	55.6	54.6	53.5	52.4
67.5°	52.4	51.3	50.2	50.2	49.1	48.0	45.8	44.7	43.6	42.6	41.5
70°	42.6	40.4	39.3	39.3	38.2	37.1	36.0	34.9	33.8	32.7	31.6
72.5°	32.7	30.5	30.5	29.5	28.4	27.3	27.3	26.2	25.1	25.1	22.9
75°	24.0	22.9	21.8	21.8	20.7	19.6	18.5	18.5	17.5	17.5	17.5
77.5°	16.4	15.3	15.3	14.2	14.2	14.2	13.1	13.1	13.1	13.1	14.2
80°	10.9	10.9	9.8	9.8	9.8	9.8	9.8	9.8	9.8	10.9	10.9
82.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	7.6
85°	3.3	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
87.5°	1.1	1.1	2.2	1.1	2.2	1.1	2.2	2.2	2.2	2.2	2.2
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: P642351

CATALOG NUMBER: ML5612LSWW97FS1E - 692W WW - 900LM - 2700K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0
2.5°	318.6	319.7	319.7	318.6	319.7	318.6	318.6	318.6
5°	315.3	314.2	314.2	314.2	313.1	314.2	314.2	314.2
7.5°	308.8	308.8	307.7	307.7	306.6	306.6	307.7	306.6
10°	301.1	300.0	301.1	300.0	300.0	300.0	298.9	300.0
12.5°	293.5	292.4	292.4	291.3	291.3	291.3	291.3	291.3
15°	284.8	283.7	283.7	282.6	282.6	281.5	282.6	281.5
17.5°	274.9	274.9	272.8	272.8	272.8	272.8	272.8	271.7
20°	262.9	262.9	261.9	262.9	260.8	260.8	260.8	260.8
22.5°	253.1	252.0	250.9	250.9	250.9	249.9	249.9	249.9
25°	241.1	241.1	240.0	240.0	238.9	238.9	238.9	238.9
27.5°	230.2	229.1	229.1	229.1	228.0	226.9	226.9	226.9
30°	218.2	218.2	217.1	217.1	216.0	216.0	216.0	216.0
32.5°	206.2	206.2	205.1	204.0	204.0	204.0	202.9	204.0
35°	194.2	193.1	193.1	192.0	192.0	192.0	190.9	190.9
37.5°	182.2	181.1	180.0	181.1	180.0	178.9	178.9	178.9
40°	169.1	168.0	168.0	166.9	166.9	166.9	165.8	166.9
42.5°	157.1	157.1	156.0	154.9	154.9	154.9	153.8	153.8
45°	145.1	142.9	144.0	142.9	142.9	141.8	141.8	140.7
47.5°	132.0	130.9	130.9	130.9	129.8	129.8	129.8	129.8
50°	118.9	117.8	118.9	117.8	117.8	116.7	116.7	116.7
52.5°	106.9	105.8	105.8	105.8	105.8	104.7	104.7	104.7
55°	94.9	93.8	93.8	93.8	92.7	92.7	91.6	91.6
57.5°	84.0	82.9	81.8	80.7	80.7	80.7	79.6	79.6
60°	72.0	70.9	69.8	69.8	68.7	68.7	68.7	67.6
62.5°	61.1	60.0	58.9	58.9	57.8	56.7	56.7	56.7
65°	50.2	49.1	49.1	48.0	46.9	46.9	45.8	45.8
67.5°	40.4	39.3	39.3	38.2	37.1	36.0	36.0	36.0
70°	31.6	30.5	29.5	29.5	29.5	28.4	27.3	27.3
72.5°	22.9	21.8	21.8	21.8	21.8	21.8	21.8	21.8
75°	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
77.5°	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
80°	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
82.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
85°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1
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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— 0°-180° - - 45°-225° - - - - 90°-270°

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(END OF REPORT)