

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: P642333

Luminaire Tested: ML5612LSWW97FS1E - 692SC WW - 600LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642333
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-131)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 692SC WW - 600LM - 3500K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 595.8 lumens
Efficiency: N/A
Efficacy: 57.8 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.09 / 1.17
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

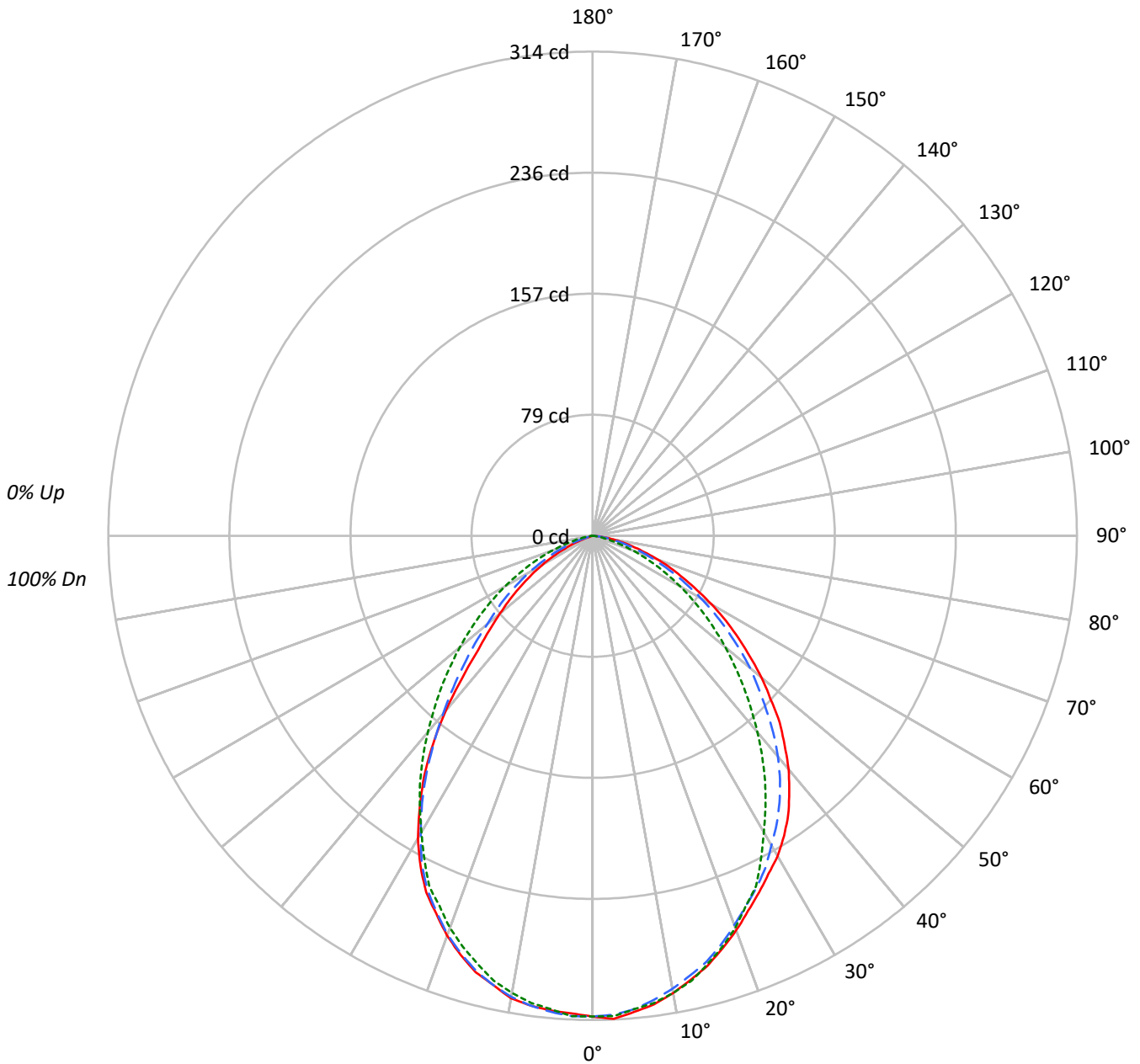
Input Watts (W): 10.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P642333

CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 600LM - 3500K

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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								
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88								
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77								
3	95	86	79	73	92	84	78	72	81	76	71	79	74	70	76	72	69	67								
4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61	59								
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52								
6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	46								
7	70	58	50	45	69	57	50	44	56	49	44	55	48	44	53	48	44	42								
8	66	53	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38								
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34								
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	17093	17093	17093	17093	17093
5°	17059	16960	16960	17059	17010
10°	16755	16605	16755	16906	16956
15°	16374	16220	16322	16578	16629
20°	15886	15676	15781	16043	16096
25°	15436	15219	15164	15327	15436
30°	15186	14673	14053	14110	14338
35°	14797	14134	13050	12568	12749
40°	14148	13375	11894	10806	10613
45°	13304	12335	10730	9125	8148
50°	12187	11343	9578	7590	6669
55°	10991	10131	8420	6442	5410
60°	9758	8870	7192	5219	4133
65°	8393	7575	5824	3853	2568
70°	7197	6187	4328	2164	1010
75°	5719	4766	2859	572	0
80°	4262	3410	1421	0	0
85°	2264	1698	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13304 cd/sqm



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CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 600LM - 3500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	29.2	4.9
10°-20°	81.2	13.6
20°-30°	115.6	19.4
30°-40°	124.4	20.9
40°-50°	107.2	18.0
50°-60°	77.7	13.0
60°-70°	43.8	7.4
70°-80°	14.9	2.5
80°-90°	1.9	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°	226.0	37.9
0°-40°	350.4	58.8
0°-60°	535.2	89.8
0°-90°	595.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	595.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	312	312	312	312	312	
5°	310	308	308	310	309	29
15°	288	286	288	292	293	81
25°	255	252	251	253	255	118
35°	221	211	195	188	190	138
45°	172	159	138	118	105	132
55°	115	106	88	67	57	103
65°	65	58	45	30	20	65
75°	27	22	14	3	0	29
85°	4	3	0	0	0	5
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°	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8
2.5°	313.6	310.9	310.0	310.9	310.9	310.9	310.9	310.9	310.9	310.0	310.9
5°	310.0	307.3	307.3	307.3	307.3	307.3	306.4	307.3	307.3	307.3	308.2
7.5°	306.4	302.8	303.7	302.8	303.7	302.8	302.8	303.7	302.8	303.7	303.7
10°	301.0	298.3	298.3	298.3	298.3	298.3	298.3	298.3	298.3	298.3	298.3
12.5°	294.8	292.1	292.1	292.1	292.1	292.1	292.1	292.1	293.0	292.1	292.1
15°	288.5	284.9	285.8	284.9	284.9	284.9	284.9	284.9	284.9	284.9	285.8
17.5°	280.4	277.7	277.7	277.7	277.7	277.7	277.7	276.8	277.7	277.7	277.7
20°	272.3	269.6	269.6	268.7	269.6	268.7	268.7	268.7	269.6	268.7	268.7
22.5°	263.3	260.6	261.5	260.6	260.6	260.6	260.6	260.6	259.7	260.6	259.7
25°	255.2	254.3	253.4	254.3	253.4	253.4	253.4	252.5	252.5	252.5	251.6
27.5°	247.1	245.3	245.3	245.3	245.3	244.4	244.4	244.4	243.5	242.6	242.6
30°	239.9	237.2	237.2	237.2	236.3	236.3	235.4	235.4	233.6	232.7	231.8
32.5°	230.9	229.2	228.3	228.3	227.4	227.4	226.5	226.5	224.7	223.8	222.0
35°	221.1	220.2	220.2	219.3	218.4	217.5	216.6	215.7	214.8	213.0	211.2
37.5°	209.4	208.5	207.6	207.6	206.7	205.8	205.8	204.0	203.1	201.3	199.5
40°	197.7	195.9	195.9	195.0	194.1	193.2	193.2	191.4	190.5	188.7	186.9
42.5°	184.2	182.4	182.4	181.5	181.5	181.5	180.6	178.8	177.0	175.2	173.4
45°	171.6	169.8	169.8	168.0	168.0	167.1	166.2	165.3	163.6	161.8	159.1
47.5°	156.4	155.5	155.5	154.6	153.7	152.8	152.8	151.9	150.1	147.4	145.6
50°	142.9	142.0	142.0	141.1	140.2	139.3	138.4	137.5	136.6	134.8	133.0
52.5°	128.5	128.5	127.6	126.7	126.7	125.8	124.9	124.0	122.2	120.4	119.5
55°	115.0	114.1	114.1	113.2	113.2	112.3	111.4	110.5	109.6	107.8	106.0
57.5°	102.4	100.6	100.6	99.7	99.7	99.7	98.9	97.1	96.2	94.4	93.5
60°	89.0	88.1	88.1	88.1	87.2	86.3	86.3	84.5	83.6	82.7	80.9
62.5°	76.4	75.5	75.5	75.5	74.6	74.6	73.7	72.8	71.9	71.0	69.2
65°	64.7	64.7	64.7	63.8	63.8	62.9	62.0	62.0	61.1	60.2	58.4
67.5°	54.8	53.9	53.9	53.9	53.0	53.0	52.1	51.2	50.3	49.4	47.6
70°	44.9	44.0	44.0	43.1	43.1	43.1	43.1	42.2	40.4	40.4	38.6
72.5°	35.0	35.0	35.0	34.1	34.1	34.1	33.2	33.2	32.4	31.5	30.6
75°	27.0	27.0	27.0	26.1	26.1	26.1	25.2	25.2	24.3	23.4	22.5
77.5°	19.8	19.8	19.8	18.9	18.9	18.9	18.0	18.0	17.1	17.1	16.2
80°	13.5	13.5	13.5	12.6	12.6	12.6	12.6	11.7	11.7	10.8	10.8
82.5°	8.1	8.1	8.1	8.1	7.2	7.2	7.2	7.2	7.2	6.3	6.3
85°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	2.7	2.7
87.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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: P642333

CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 600LM - 3500K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8
2.5°	310.9	310.9	310.9	310.9	310.9	310.9	310.9	310.9	310.9	311.8	310.9
5°	308.2	308.2	308.2	308.2	308.2	308.2	309.1	308.2	309.1	308.2	309.1
7.5°	303.7	303.7	304.6	304.6	303.7	304.6	304.6	304.6	304.6	305.5	305.5
10°	298.3	299.2	299.2	300.1	300.1	300.1	300.1	301.0	301.0	301.0	301.0
12.5°	293.0	293.0	293.0	293.0	293.9	293.0	293.9	293.9	294.8	295.7	294.8
15°	284.9	285.8	285.8	285.8	285.8	285.8	286.7	287.6	287.6	287.6	288.5
17.5°	277.7	277.7	277.7	278.6	277.7	278.6	278.6	278.6	279.5	279.5	280.4
20°	268.7	267.8	269.6	268.7	268.7	269.6	269.6	269.6	270.5	270.5	270.5
22.5°	258.8	259.7	258.8	258.8	259.7	259.7	259.7	258.8	259.7	259.7	260.6
25°	250.7	250.7	250.7	250.7	250.7	250.7	250.7	249.8	250.7	250.7	250.7
27.5°	241.7	239.9	239.9	239.0	239.0	238.1	237.2	237.2	237.2	236.3	237.2
30°	230.9	229.2	228.3	227.4	226.5	226.5	224.7	223.8	222.9	222.0	221.1
32.5°	220.2	218.4	217.5	216.6	214.8	213.9	212.1	211.2	210.3	208.5	206.7
35°	210.3	207.6	205.8	204.0	203.1	202.2	200.4	198.6	196.8	195.0	193.2
37.5°	196.8	195.0	193.2	191.4	190.5	189.6	187.8	184.2	182.4	180.6	178.8
40°	185.1	182.4	180.6	177.9	177.0	175.2	173.4	170.7	168.0	166.2	164.5
42.5°	170.7	168.9	167.1	164.5	163.6	161.8	159.1	157.3	155.5	151.9	150.1
45°	157.3	155.5	153.7	151.0	149.2	148.3	146.5	143.8	141.1	138.4	136.6
47.5°	143.8	142.0	139.3	137.5	135.7	134.8	133.0	130.3	127.6	124.9	123.1
50°	130.3	128.5	126.7	123.1	123.1	121.3	119.5	116.8	115.0	112.3	109.6
52.5°	117.7	115.0	113.2	110.5	110.5	109.6	106.9	104.2	102.4	99.7	98.0
55°	104.2	102.4	100.6	98.9	97.1	96.2	95.3	92.6	89.9	88.1	85.4
57.5°	91.7	89.0	88.1	86.3	85.4	84.5	82.7	80.0	78.2	76.4	74.6
60°	80.0	78.2	75.5	74.6	73.7	72.8	71.0	69.2	67.4	65.6	63.8
62.5°	68.3	66.5	64.7	62.9	62.0	61.1	60.2	58.4	56.6	54.8	53.0
65°	56.6	55.7	53.9	53.0	52.1	51.2	49.4	47.6	46.7	44.9	43.1
67.5°	46.7	45.8	44.0	43.1	42.2	42.2	39.5	38.6	36.8	35.9	34.1
70°	37.7	36.8	35.0	34.1	33.2	32.4	31.5	30.6	28.8	27.0	26.1
72.5°	29.7	27.9	27.0	26.1	25.2	25.2	23.4	22.5	20.7	19.8	18.0
75°	21.6	20.7	19.8	18.9	18.9	18.0	17.1	16.2	14.4	13.5	12.6
77.5°	15.3	14.4	13.5	12.6	12.6	11.7	10.8	9.9	9.0	8.1	7.2
80°	9.9	9.0	9.0	8.1	7.2	7.2	6.3	5.4	4.5	4.5	3.6
82.5°	5.4	5.4	4.5	4.5	3.6	3.6	2.7	2.7	1.8	1.8	0.9
85°	2.7	1.8	1.8	1.8	1.8	0.9	0.9	0.9	0.0	0.0	0.0
87.5°	0.9	0.9	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: P642333

CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 600LM - 3500K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8
2.5°	310.9	310.9	310.9	310.9	310.9	310.9	310.9	310.9	311.8	310.9	310.9
5°	309.1	309.1	310.0	309.1	310.0	310.0	309.1	309.1	310.0	310.9	310.0
7.5°	305.5	305.5	306.4	306.4	306.4	306.4	306.4	307.3	307.3	308.2	308.2
10°	301.9	301.9	301.9	301.9	302.8	302.8	303.7	303.7	303.7	303.7	303.7
12.5°	295.7	296.6	296.6	296.6	296.6	297.4	297.4	298.3	298.3	298.3	299.2
15°	288.5	289.4	290.3	290.3	289.4	290.3	291.2	291.2	292.1	292.1	292.1
17.5°	280.4	281.3	281.3	282.2	281.3	283.1	283.1	284.0	284.0	284.9	284.9
20°	271.4	272.3	272.3	272.3	273.2	273.2	274.1	274.1	275.0	275.0	275.0
22.5°	260.6	261.5	261.5	261.5	261.5	262.4	262.4	263.3	264.2	265.1	264.2
25°	250.7	251.6	252.5	251.6	252.5	252.5	252.5	253.4	253.4	254.3	253.4
27.5°	237.2	237.2	237.2	238.1	239.0	239.0	239.0	239.9	239.9	239.9	240.8
30°	221.1	220.2	221.1	221.1	221.1	221.1	222.9	222.9	222.9	223.8	224.7
32.5°	205.8	205.8	205.8	204.9	204.9	204.9	204.9	205.8	205.8	206.7	207.6
35°	191.4	190.5	188.7	188.7	188.7	187.8	186.9	186.9	187.8	187.8	187.8
37.5°	176.1	175.2	174.3	172.5	172.5	170.7	169.8	168.9	168.9	168.0	168.0
40°	161.8	160.0	158.2	158.2	156.4	155.5	153.7	152.8	151.0	149.2	149.2
42.5°	147.4	145.6	143.8	142.9	141.1	140.2	137.5	135.7	133.9	133.0	131.2
45°	133.9	132.1	129.4	128.5	126.7	124.9	123.1	120.4	117.7	115.9	115.0
47.5°	120.4	118.6	115.9	114.1	113.2	110.5	108.7	106.0	103.3	100.6	98.0
50°	107.8	105.1	102.4	100.6	99.7	97.1	95.3	92.6	89.0	88.1	85.4
52.5°	95.3	92.6	89.9	89.0	88.1	85.4	82.7	80.0	78.2	75.5	73.7
55°	82.7	80.9	78.2	77.3	76.4	73.7	71.0	69.2	67.4	64.7	62.9
57.5°	71.9	70.1	67.4	66.5	65.6	62.9	61.1	58.4	56.6	54.8	53.0
60°	62.0	59.3	57.5	56.6	55.7	53.0	51.2	49.4	47.6	45.8	43.1
62.5°	51.2	49.4	47.6	46.7	44.9	44.0	41.3	40.4	37.7	36.8	35.0
65°	41.3	39.5	37.7	37.7	36.8	34.1	33.2	31.5	29.7	27.9	27.0
67.5°	33.2	31.5	29.7	28.8	27.9	26.1	25.2	23.4	21.6	20.7	18.9
70°	25.2	23.4	21.6	20.7	19.8	18.9	17.1	15.3	13.5	12.6	10.8
72.5°	17.1	15.3	14.4	14.4	13.5	11.7	9.9	9.0	7.2	6.3	5.4
75°	10.8	9.0	8.1	7.2	7.2	6.3	4.5	3.6	2.7	1.8	0.9
77.5°	6.3	5.4	4.5	3.6	3.6	2.7	1.8	0.9	0.9	0.0	0.0
80°	2.7	1.8	0.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.9	0.9	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: P642333

CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 600LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	311.8	311.8	311.8	311.8	311.8	311.8	311.8	311.8
2.5°	310.9	310.9	310.9	310.9	310.0	310.0	310.0	310.0
5°	310.0	310.0	310.0	310.0	309.1	309.1	310.0	309.1
7.5°	308.2	308.2	307.3	307.3	307.3	307.3	307.3	307.3
10°	304.6	304.6	304.6	303.7	304.6	304.6	303.7	304.6
12.5°	299.2	299.2	299.2	299.2	298.3	298.3	299.2	298.3
15°	293.0	293.0	293.0	293.0	293.0	292.1	293.0	293.0
17.5°	285.8	285.8	284.9	284.9	284.9	285.8	285.8	284.9
20°	275.9	275.9	275.9	275.9	275.9	275.9	275.9	275.9
22.5°	265.1	265.1	265.1	265.1	265.1	265.1	265.1	265.1
25°	254.3	254.3	254.3	254.3	254.3	254.3	254.3	255.2
27.5°	240.8	240.8	240.8	240.8	240.8	239.9	239.9	241.7
30°	224.7	225.6	225.6	225.6	225.6	225.6	225.6	226.5
32.5°	208.5	208.5	208.5	209.4	208.5	209.4	208.5	208.5
35°	189.6	189.6	189.6	189.6	189.6	190.5	190.5	190.5
37.5°	168.0	168.9	168.9	169.8	169.8	169.8	170.7	169.8
40°	148.3	148.3	148.3	147.4	148.3	147.4	148.3	148.3
42.5°	129.4	127.6	127.6	126.7	126.7	125.8	124.9	124.9
45°	112.3	109.6	109.6	108.7	107.8	106.0	105.1	105.1
47.5°	96.2	95.3	94.4	93.5	92.6	90.8	89.9	90.8
50°	82.7	81.8	80.9	80.9	80.0	79.1	78.2	78.2
52.5°	71.9	70.1	69.2	69.2	68.3	67.4	67.4	67.4
55°	61.1	59.3	59.3	59.3	58.4	57.5	57.5	56.6
57.5°	51.2	49.4	49.4	48.5	47.6	47.6	47.6	46.7
60°	42.2	40.4	39.5	39.5	38.6	37.7	37.7	37.7
62.5°	33.2	32.4	30.6	30.6	29.7	28.8	27.9	28.8
65°	25.2	23.4	22.5	22.5	21.6	20.7	19.8	19.8
67.5°	17.1	16.2	15.3	15.3	13.5	13.5	12.6	12.6
70°	9.9	9.0	9.0	8.1	7.2	7.2	6.3	6.3
72.5°	4.5	3.6	3.6	2.7	2.7	1.8	1.8	1.8
75°	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.9	0.9	0.0	0.0
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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— 0°-180° - - 45°-225° - - - - 90°-270°

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(END OF REPORT)