

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: P642353

Luminaire Tested: ML5612LSWW97FS1E - 692W WW - 900LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642353
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 - 3500K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 755.7 lumens
Efficiency: N/A
Efficacy: 56.8 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

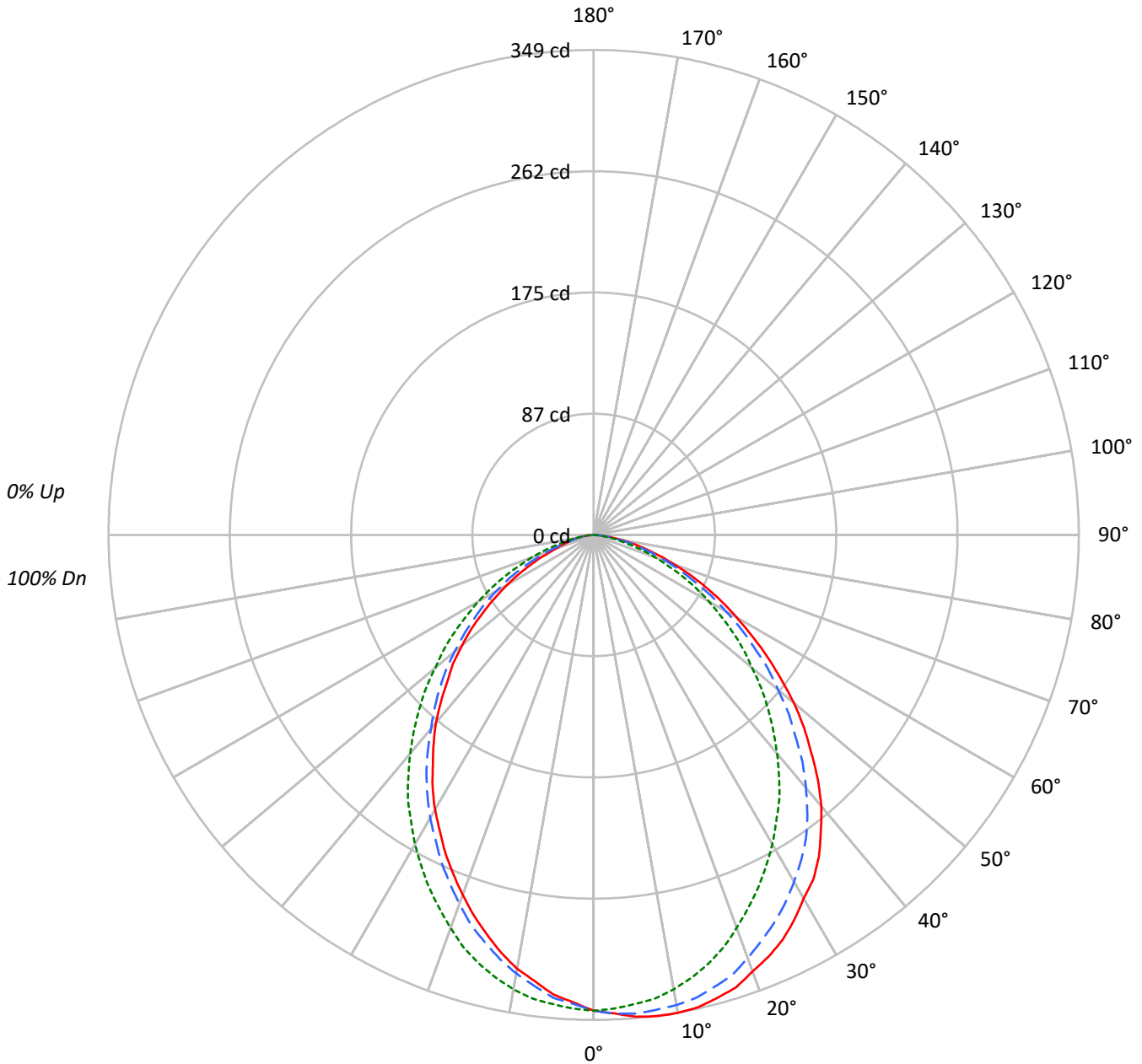
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
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°	18770	18770	18770	18770	18770
5°	19156	19029	18650	18396	18270
10°	19444	19121	18481	17841	17646
15°	19563	19103	18122	17208	16879
20°	19503	18896	17554	16475	16072
25°	19453	18618	16943	15690	15273
30°	19117	18243	16275	14888	14445
35°	18899	17822	15586	14040	13498
40°	18234	16996	14685	13032	12624
45°	17157	15909	13761	12156	11528
50°	16025	14746	12682	11113	10516
55°	14547	13438	11679	10026	9252
60°	13014	12006	10493	8848	7839
65°	11519	10468	9119	7472	6278
70°	9793	9056	7581	5722	4616
75°	8049	7329	5613	3897	3897
80°	6188	5462	4009	3283	3631
85°	4340	3648	2893	2893	2893

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 17157 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.2	4.3
10°-20°	90.1	11.9
20°-30°	130.4	17.3
30°-40°	148.1	19.6
40°-50°	139.8	18.5
50°-60°	110.2	14.6
60°-70°	69.0	9.1
70°-80°	29.8	3.9
80°-90°	6.1	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°	252.6	33.4
0°-40°	400.7	53.0
0°-60°	650.8	86.1
0°-90°	755.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	755.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	342	342	342	342	342	
5°	348	346	339	334	332	33
15°	345	337	319	303	297	97
25°	322	308	280	259	252	148
35°	282	266	233	210	202	176
45°	221	205	178	157	149	171
55°	152	141	122	105	97	136
65°	89	81	70	58	48	88
75°	38	35	26	18	18	41
85°	7	6	5	5	5	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°	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4
2.5°	344.7	344.7	345.8	345.8	344.7	344.7	344.7	344.7	344.7	344.7	344.7
5°	348.1	348.1	348.1	348.1	347.0	347.0	347.0	347.0	347.0	345.8	345.8
7.5°	349.3	349.3	349.3	349.3	348.1	348.1	347.0	347.0	347.0	345.8	344.7
10°	349.3	349.3	349.3	348.1	348.1	347.0	348.1	347.0	345.8	344.7	343.5
12.5°	348.1	347.0	347.0	347.0	345.8	345.8	345.8	344.7	343.5	342.4	341.2
15°	344.7	344.7	344.7	343.5	343.5	342.4	342.4	341.2	340.1	337.8	336.6
17.5°	341.2	341.2	340.1	340.1	338.9	337.8	337.8	336.6	335.5	333.2	332.0
20°	334.3	334.3	334.3	333.2	332.0	332.0	330.8	329.7	327.4	325.1	323.9
22.5°	328.5	327.4	327.4	326.2	325.1	325.1	323.9	321.6	320.5	318.2	315.9
25°	321.6	320.5	320.5	319.3	318.2	317.0	317.0	314.7	312.4	310.1	307.8
27.5°	312.4	312.4	311.2	310.1	308.9	308.9	307.8	306.6	303.2	300.9	298.6
30°	302.0	303.2	302.0	300.9	299.7	299.7	298.6	296.3	294.0	290.5	288.2
32.5°	294.0	294.0	292.8	291.7	289.3	289.3	289.3	285.9	283.6	281.3	277.8
35°	282.4	282.4	282.4	280.1	279.0	277.8	276.7	274.4	272.1	269.7	266.3
37.5°	268.6	269.7	268.6	267.4	266.3	265.1	264.0	261.7	258.2	255.9	252.5
40°	254.8	254.8	253.6	252.5	251.3	250.2	249.0	246.7	244.4	240.9	237.5
42.5°	238.6	238.6	237.5	236.3	235.2	234.0	234.0	231.7	228.2	225.9	222.5
45°	221.3	221.3	221.3	220.2	219.0	217.9	216.7	215.6	213.3	209.8	205.2
47.5°	205.2	205.2	205.2	202.9	202.9	200.6	199.4	197.1	196.0	192.5	190.2
50°	187.9	186.7	186.7	185.6	184.4	183.3	183.3	179.8	178.7	176.4	172.9
52.5°	169.5	169.5	169.5	168.3	167.2	166.0	166.0	163.7	161.4	159.1	157.9
55°	152.2	152.2	152.2	151.0	149.9	149.9	148.7	146.4	145.2	142.9	140.6
57.5°	134.9	136.0	134.9	133.7	133.7	132.6	132.6	131.4	129.1	126.8	125.7
60°	118.7	118.7	118.7	117.6	116.4	116.4	116.4	115.3	113.0	111.8	109.5
62.5°	103.7	103.7	102.6	102.6	101.4	101.4	100.3	99.1	98.0	96.8	95.7
65°	88.8	87.6	87.6	87.6	86.5	86.5	86.5	85.3	83.0	81.8	80.7
67.5°	74.9	74.9	73.8	73.8	72.6	72.6	72.6	71.5	70.3	69.2	68.0
70°	61.1	61.1	61.1	61.1	59.9	59.9	59.9	58.8	57.6	57.6	56.5
72.5°	49.6	49.6	49.6	49.6	48.4	48.4	48.4	47.3	46.1	45.0	45.0
75°	38.0	39.2	38.0	38.0	38.0	38.0	36.9	36.9	35.7	34.6	34.6
77.5°	28.8	28.8	28.8	28.8	27.7	27.7	27.7	27.7	26.5	25.4	25.4
80°	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	18.4	18.4	17.3
82.5°	11.5	12.7	12.7	12.7	11.5	11.5	11.5	11.5	11.5	11.5	10.4
85°	6.9	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
87.5°	2.3	2.3	2.3	2.3	2.3	1.2	1.2	1.2	1.2	1.2	1.2
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: P642353

CATALOG NUMBER: ML5612LSWW97FS1E - 692W WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4
2.5°	343.5	343.5	343.5	343.5	342.4	342.4	342.4	341.2	341.2	341.2	341.2
5°	344.7	343.5	343.5	342.4	342.4	342.4	341.2	341.2	340.1	338.9	338.9
7.5°	343.5	343.5	342.4	341.2	341.2	340.1	338.9	337.8	336.6	336.6	334.3
10°	342.4	341.2	340.1	338.9	337.8	337.8	335.5	334.3	333.2	332.0	330.8
12.5°	338.9	337.8	336.6	334.3	334.3	333.2	330.8	329.7	327.4	326.2	323.9
15°	334.3	333.2	332.0	329.7	328.5	327.4	325.1	322.8	320.5	319.3	317.0
17.5°	329.7	327.4	325.1	322.8	321.6	320.5	318.2	315.9	313.6	311.2	308.9
20°	321.6	319.3	317.0	313.6	312.4	311.2	307.8	305.5	303.2	300.9	298.6
22.5°	313.6	311.2	307.8	305.5	304.3	302.0	299.7	296.3	294.0	290.5	288.2
25°	305.5	302.0	298.6	296.3	294.0	292.8	289.3	287.0	282.4	280.1	277.8
27.5°	295.1	292.8	289.3	285.9	283.6	281.3	279.0	275.5	272.1	268.6	266.3
30°	284.7	281.3	277.8	275.5	272.1	270.9	267.4	264.0	260.5	257.1	254.8
32.5°	274.4	270.9	267.4	264.0	261.7	259.4	255.9	252.5	247.8	244.4	242.1
35°	262.8	259.4	254.8	251.3	249.0	246.7	243.2	239.8	236.3	232.9	229.4
37.5°	249.0	244.4	242.1	238.6	235.2	232.9	229.4	224.8	222.5	219.0	215.6
40°	234.0	230.6	227.1	223.6	220.2	219.0	214.4	211.0	208.7	205.2	201.7
42.5°	219.0	215.6	211.0	207.5	205.2	204.0	200.6	197.1	193.7	191.4	187.9
45°	202.9	199.4	196.0	192.5	190.2	189.1	185.6	183.3	179.8	177.5	174.1
47.5°	186.7	183.3	181.0	177.5	175.2	174.1	171.8	168.3	164.8	163.7	161.4
50°	170.6	167.2	164.8	161.4	160.2	159.1	156.8	154.5	152.2	148.7	147.6
52.5°	154.5	151.0	148.7	146.4	146.4	144.1	141.8	140.6	138.3	136.0	133.7
55°	138.3	137.2	134.9	131.4	131.4	130.3	128.0	125.7	123.3	122.2	119.9
57.5°	122.2	121.0	118.7	117.6	116.4	115.3	114.1	111.8	110.7	108.4	107.2
60°	108.4	107.2	104.9	103.7	102.6	101.4	100.3	98.0	96.8	95.7	94.5
62.5°	93.4	92.2	91.1	89.9	88.8	87.6	87.6	85.3	84.2	83.0	81.8
65°	80.7	78.4	77.2	76.1	76.1	74.9	73.8	72.6	71.5	70.3	69.2
67.5°	66.9	65.7	65.7	63.4	63.4	62.2	61.1	61.1	58.8	57.6	56.5
70°	55.3	54.2	53.0	51.9	51.9	50.7	49.6	48.4	47.3	47.3	46.1
72.5°	43.8	42.7	42.7	41.5	40.3	40.3	39.2	38.0	36.9	36.9	35.7
75°	33.4	32.3	32.3	31.1	31.1	30.0	28.8	28.8	27.7	26.5	25.4
77.5°	24.2	24.2	23.1	23.1	21.9	21.9	20.7	20.7	19.6	18.4	18.4
80°	17.3	16.1	16.1	15.0	15.0	15.0	13.8	13.8	12.7	12.7	11.5
82.5°	10.4	10.4	9.2	9.2	9.2	9.2	8.1	8.1	8.1	6.9	6.9
85°	5.8	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	3.5
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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: P642353

CATALOG NUMBER: ML5612LSWW97FS1E - 692W WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4
2.5°	340.1	340.1	338.9	340.1	338.9	338.9	338.9	338.9	337.8	337.8	337.8
5°	337.8	336.6	336.6	335.5	336.6	335.5	334.3	334.3	334.3	334.3	333.2
7.5°	333.2	333.2	332.0	330.8	330.8	329.7	328.5	328.5	327.4	327.4	326.2
10°	329.7	327.4	326.2	325.1	325.1	323.9	322.8	321.6	320.5	319.3	319.3
12.5°	321.6	320.5	319.3	318.2	318.2	315.9	314.7	313.6	312.4	311.2	310.1
15°	315.9	313.6	311.2	310.1	310.1	307.8	306.6	305.5	303.2	303.2	300.9
17.5°	306.6	304.3	302.0	300.9	299.7	298.6	297.4	295.1	294.0	291.7	291.7
20°	295.1	294.0	290.5	289.3	288.2	287.0	284.7	283.6	282.4	280.1	279.0
22.5°	285.9	282.4	280.1	279.0	279.0	275.5	274.4	272.1	270.9	269.7	267.4
25°	274.4	272.1	269.7	267.4	267.4	265.1	264.0	261.7	259.4	258.2	257.1
27.5°	262.8	260.5	257.1	255.9	254.8	253.6	251.3	249.0	246.7	245.5	244.4
30°	250.2	247.8	245.5	244.4	242.1	239.8	237.5	236.3	235.2	232.9	231.7
32.5°	238.6	235.2	232.9	230.6	230.6	227.1	225.9	223.6	222.5	221.3	219.0
35°	225.9	222.5	220.2	219.0	217.9	214.4	212.1	209.8	209.8	207.5	206.3
37.5°	212.1	208.7	207.5	205.2	204.0	201.7	199.4	198.3	196.0	193.7	193.7
40°	199.4	196.0	192.5	192.5	190.2	189.1	185.6	184.4	182.1	181.0	179.8
42.5°	185.6	182.1	179.8	178.7	177.5	175.2	172.9	170.6	169.5	168.3	167.2
45°	170.6	168.3	167.2	164.8	163.7	161.4	160.2	157.9	156.8	154.5	153.3
47.5°	157.9	155.6	153.3	152.2	151.0	148.7	147.6	145.2	144.1	141.8	140.6
50°	145.2	142.9	140.6	139.5	138.3	136.0	133.7	132.6	130.3	129.1	126.8
52.5°	131.4	129.1	126.8	126.8	125.7	123.3	122.2	119.9	117.6	115.3	114.1
55°	118.7	116.4	114.1	113.0	113.0	110.7	108.4	107.2	104.9	103.7	101.4
57.5°	104.9	102.6	101.4	100.3	100.3	98.0	96.8	94.5	93.4	91.1	89.9
60°	92.2	91.1	88.8	88.8	87.6	85.3	84.2	81.8	80.7	79.5	78.4
62.5°	79.5	78.4	76.1	76.1	74.9	73.8	72.6	70.3	69.2	66.9	65.7
65°	66.9	65.7	64.6	63.4	63.4	61.1	59.9	58.8	57.6	56.5	55.3
67.5°	55.3	54.2	53.0	53.0	51.9	50.7	48.4	47.3	46.1	45.0	43.8
70°	45.0	42.7	41.5	41.5	40.3	39.2	38.0	36.9	35.7	34.6	33.4
72.5°	34.6	32.3	32.3	31.1	30.0	28.8	28.8	27.7	26.5	26.5	24.2
75°	25.4	24.2	23.1	23.1	21.9	20.7	19.6	19.6	18.4	18.4	18.4
77.5°	17.3	16.1	16.1	15.0	15.0	15.0	13.8	13.8	13.8	13.8	15.0
80°	11.5	11.5	10.4	10.4	10.4	10.4	10.4	10.4	10.4	11.5	11.5
82.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	8.1
85°	3.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
87.5°	1.2	1.2	2.3	1.2	2.3	1.2	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: P642353

CATALOG NUMBER: ML5612LSWW97FS1E - 692W WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	342.4	342.4	342.4	342.4	342.4	342.4	342.4	342.4
2.5°	336.6	337.8	337.8	336.6	337.8	336.6	336.6	336.6
5°	333.2	332.0	332.0	332.0	330.8	332.0	332.0	332.0
7.5°	326.2	326.2	325.1	325.1	323.9	323.9	325.1	323.9
10°	318.2	317.0	318.2	317.0	317.0	317.0	315.9	317.0
12.5°	310.1	308.9	308.9	307.8	307.8	307.8	307.8	307.8
15°	300.9	299.7	299.7	298.6	298.6	297.4	298.6	297.4
17.5°	290.5	290.5	288.2	288.2	288.2	288.2	288.2	287.0
20°	277.8	277.8	276.7	277.8	275.5	275.5	275.5	275.5
22.5°	267.4	266.3	265.1	265.1	265.1	264.0	264.0	264.0
25°	254.8	254.8	253.6	253.6	252.5	252.5	252.5	252.5
27.5°	243.2	242.1	242.1	242.1	240.9	239.8	239.8	239.8
30°	230.6	230.6	229.4	229.4	228.2	228.2	228.2	228.2
32.5°	217.9	217.9	216.7	215.6	215.6	215.6	214.4	215.6
35°	205.2	204.0	204.0	202.9	202.9	202.9	201.7	201.7
37.5°	192.5	191.4	190.2	191.4	190.2	189.1	189.1	189.1
40°	178.7	177.5	177.5	176.4	176.4	176.4	175.2	176.4
42.5°	166.0	166.0	164.8	163.7	163.7	163.7	162.5	162.5
45°	153.3	151.0	152.2	151.0	151.0	149.9	149.9	148.7
47.5°	139.5	138.3	138.3	138.3	137.2	137.2	137.2	137.2
50°	125.7	124.5	125.7	124.5	124.5	123.3	123.3	123.3
52.5°	113.0	111.8	111.8	111.8	111.8	110.7	110.7	110.7
55°	100.3	99.1	99.1	99.1	98.0	98.0	96.8	96.8
57.5°	88.8	87.6	86.5	85.3	85.3	85.3	84.2	84.2
60°	76.1	74.9	73.8	73.8	72.6	72.6	72.6	71.5
62.5°	64.6	63.4	62.2	62.2	61.1	59.9	59.9	59.9
65°	53.0	51.9	51.9	50.7	49.6	49.6	48.4	48.4
67.5°	42.7	41.5	41.5	40.3	39.2	38.0	38.0	38.0
70°	33.4	32.3	31.1	31.1	31.1	30.0	28.8	28.8
72.5°	24.2	23.1	23.1	23.1	23.1	23.1	23.1	23.1
75°	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
77.5°	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
80°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
82.5°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
85°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.2
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)