

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: P642321

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

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642321
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-132)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 692H WW - 900LM - 2700K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH HAZE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 706.8 lumens
Efficiency: N/A
Efficacy: 53.1 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.12 / 1.23
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

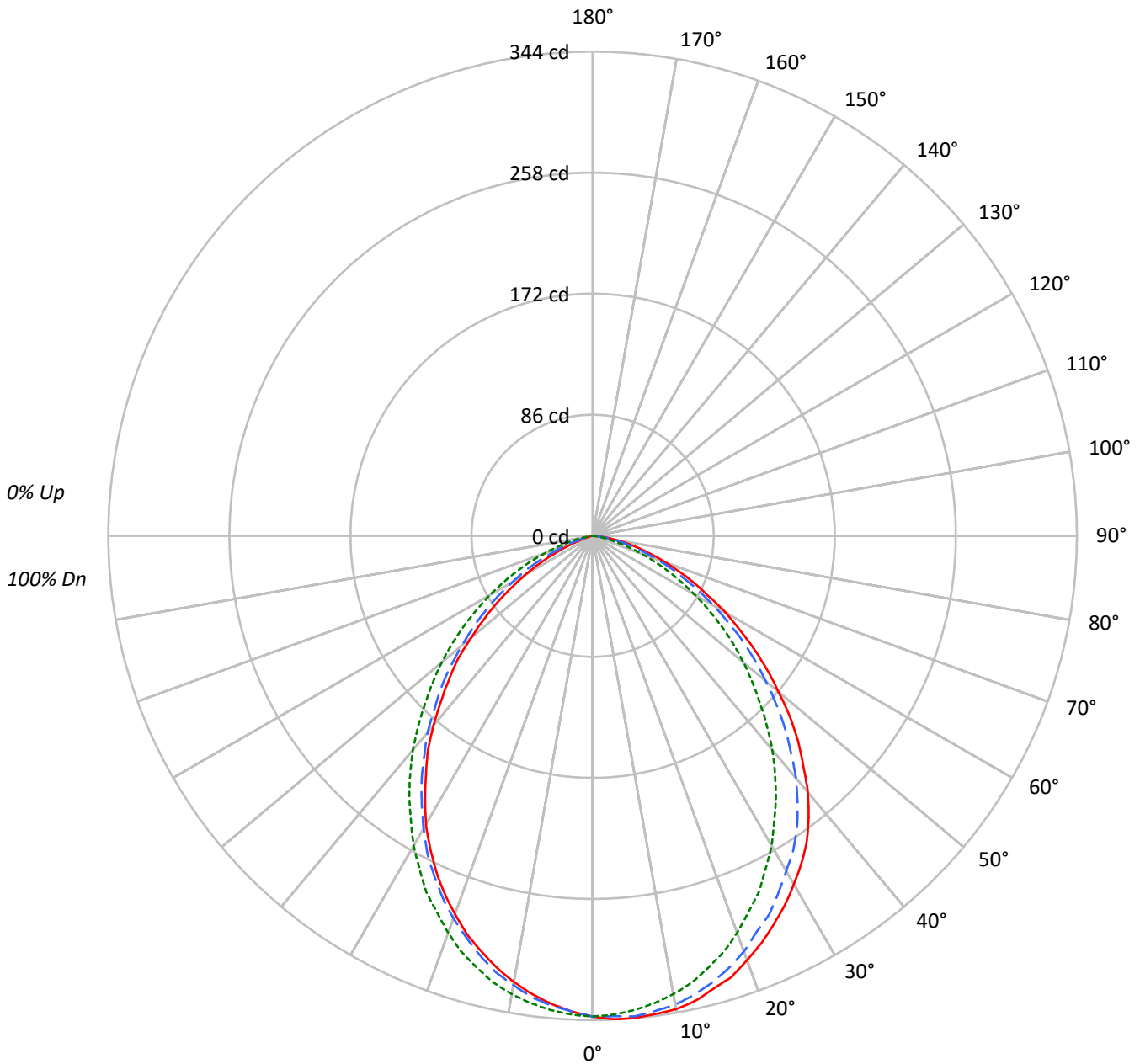
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88				88				
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	84	80	78	76				76				
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66				66				
4	87	76	68	62	85	75	67	62	72	66	61	70	65	60	68	63	59	57				57				
5	80	69	60	54	78	68	60	54	66	59	54	64	58	53	62	57	53	51				51				
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45				45				
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40				40				
8	65	52	44	39	63	52	44	39	50	43	38	49	43	38	48	42	38	36				36				
9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	35	33				33				
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	41	36	32	30				30				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	18727	18727	18727	18727	18727
5°	18919	18859	18617	18435	18374
10°	19015	18832	18409	18041	17919
15°	18893	18644	18025	17526	17344
20°	18715	18336	17507	16871	16679
25°	18418	17953	16900	16108	15908
30°	18098	17408	16097	15199	14990
35°	17748	16945	15192	14168	13806
40°	17025	16087	14212	13046	12574
45°	15994	14978	13032	11761	11172
50°	14703	13680	11914	10328	9586
55°	13352	12415	10638	8869	7923
60°	11962	10887	9210	7181	5986
65°	10338	9340	7640	5383	3827
70°	8751	7694	5770	3318	1747
75°	7159	6015	3707	1165	699
80°	5177	4136	1736	347	347
85°	2768	2076	692	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 15994 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.1	4.5
10°-20°	89.7	12.7
20°-30°	129.3	18.3
30°-40°	144.5	20.4
40°-50°	132.5	18.7
50°-60°	99.5	14.1
60°-70°	56.8	8.0
70°-80°	19.8	2.8
80°-90°	2.6	0.4
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°	251.0	35.5
0°-40°	395.5	56.0
0°-60°	627.5	88.8
0°-90°	706.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	706.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	342	342	342	342	342	
5°	344	343	338	335	334	33
15°	333	328	318	309	306	94
25°	304	297	279	266	263	140
35°	265	253	227	212	206	165
45°	206	193	168	152	144	159
55°	140	130	111	93	83	125
65°	80	72	59	42	30	79
75°	34	28	18	6	3	36
85°	4	3	1	0	0	6
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°	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6
2.5°	343.8	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	341.6
5°	343.8	343.8	343.8	343.8	343.8	343.8	343.8	342.7	342.7	342.7	342.7
7.5°	342.7	342.7	342.7	342.7	342.7	342.7	342.7	341.6	341.6	340.5	340.5
10°	341.6	341.6	341.6	340.5	340.5	340.5	340.5	340.5	339.4	339.4	338.3
12.5°	338.3	338.3	338.3	338.3	337.2	337.2	337.2	336.1	335.0	335.0	333.9
15°	332.9	333.9	333.9	332.9	332.9	332.9	332.9	331.8	330.7	329.6	328.5
17.5°	328.5	328.5	328.5	327.4	326.3	327.4	326.3	325.2	324.1	323.0	321.9
20°	320.8	320.8	319.8	319.8	319.8	319.8	318.7	317.6	316.5	315.4	314.3
22.5°	313.2	313.2	313.2	311.0	311.0	311.0	309.9	309.9	307.8	306.7	304.5
25°	304.5	304.5	304.5	303.4	302.3	301.2	302.3	300.1	299.0	296.8	296.8
27.5°	295.7	295.7	294.7	294.7	293.6	293.6	292.5	290.3	289.2	288.1	285.9
30°	285.9	285.9	284.8	284.8	283.7	282.7	282.7	280.5	279.4	277.2	275.0
32.5°	276.1	276.1	275.0	275.0	273.9	272.8	272.8	270.6	268.5	266.3	265.2
35°	265.2	265.2	264.1	264.1	263.0	261.9	260.8	258.6	257.6	254.3	253.2
37.5°	252.1	253.2	251.0	251.0	249.9	248.8	247.7	246.6	244.5	242.3	239.0
40°	237.9	236.8	236.8	235.7	234.6	234.6	233.5	231.4	230.3	227.0	224.8
42.5°	221.5	221.5	221.5	220.4	219.4	219.4	217.2	216.1	213.9	211.7	208.4
45°	206.3	206.3	205.2	205.2	203.0	203.0	201.9	199.7	198.6	195.3	193.2
47.5°	189.9	188.8	188.8	187.7	186.6	186.6	185.5	184.4	182.3	179.0	176.8
50°	172.4	172.4	172.4	171.3	170.2	170.2	169.2	167.0	165.9	163.7	160.4
52.5°	156.1	156.1	156.1	155.0	153.9	153.9	152.8	151.7	149.5	147.3	145.1
55°	139.7	139.7	139.7	138.6	138.6	136.4	136.4	135.3	133.1	131.0	129.9
57.5°	123.3	123.3	123.3	123.3	122.2	122.2	121.1	120.0	117.9	116.8	113.5
60°	109.1	108.0	108.0	106.9	106.9	105.9	104.8	103.7	102.6	100.4	99.3
62.5°	92.8	93.9	92.8	92.8	91.7	91.7	91.7	89.5	88.4	86.2	85.1
65°	79.7	79.7	79.7	79.7	77.5	77.5	77.5	75.3	74.2	74.2	72.0
67.5°	66.6	66.6	66.6	65.5	65.5	65.5	64.4	63.3	62.2	61.1	60.0
70°	54.6	54.6	54.6	53.5	53.5	52.4	52.4	51.3	50.2	50.2	48.0
72.5°	43.7	43.7	43.7	43.7	42.6	42.6	41.5	41.5	40.4	39.3	38.2
75°	33.8	33.8	33.8	32.7	32.7	32.7	31.6	31.6	30.6	29.5	28.4
77.5°	25.1	24.0	24.0	24.0	24.0	22.9	22.9	22.9	21.8	20.7	20.7
80°	16.4	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	8.7	8.7	8.7	7.6	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°	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6
2.5°	342.7	342.7	341.6	341.6	341.6	341.6	341.6	340.5	340.5	340.5	340.5
5°	342.7	341.6	340.5	340.5	340.5	340.5	339.4	339.4	339.4	338.3	338.3
7.5°	339.4	339.4	339.4	338.3	338.3	337.2	337.2	336.1	336.1	335.0	335.0
10°	337.2	336.1	336.1	335.0	335.0	333.9	333.9	331.8	330.7	330.7	329.6
12.5°	332.9	331.8	331.8	329.6	329.6	329.6	328.5	326.3	325.2	325.2	324.1
15°	327.4	326.3	325.2	323.0	323.0	321.9	320.8	319.8	318.7	317.6	316.5
17.5°	320.8	318.7	317.6	316.5	315.4	314.3	313.2	312.1	309.9	309.9	307.8
20°	313.2	311.0	309.9	307.8	306.7	306.7	304.5	302.3	301.2	300.1	297.9
22.5°	303.4	302.3	300.1	297.9	296.8	296.8	294.7	292.5	291.4	289.2	288.1
25°	294.7	291.4	290.3	288.1	287.0	287.0	284.8	282.7	280.5	279.4	277.2
27.5°	283.7	281.6	280.5	277.2	276.1	275.0	272.8	270.6	268.5	266.3	264.1
30°	272.8	270.6	268.5	265.2	265.2	263.0	260.8	257.6	256.5	254.3	251.0
32.5°	261.9	259.7	256.5	254.3	252.1	251.0	247.7	245.5	243.4	240.1	239.0
35°	249.9	246.6	244.5	241.2	240.1	237.9	235.7	232.5	230.3	227.0	223.7
37.5°	236.8	232.5	230.3	227.0	225.9	223.7	221.5	219.4	216.1	212.8	210.6
40°	222.6	218.3	215.0	212.8	210.6	208.4	207.4	203.0	200.8	198.6	196.4
42.5°	206.3	203.0	199.7	197.5	195.3	194.3	191.0	188.8	185.5	183.3	181.2
45°	191.0	187.7	184.4	181.2	180.1	179.0	176.8	173.5	170.2	168.1	165.9
47.5°	174.6	172.4	168.1	167.0	164.8	163.7	160.4	158.2	157.2	153.9	151.7
50°	158.2	156.1	153.9	150.6	149.5	148.4	146.2	144.1	141.9	139.7	137.5
52.5°	141.9	140.8	138.6	135.3	135.3	134.2	132.0	129.9	127.7	125.5	123.3
55°	127.7	125.5	123.3	121.1	120.0	119.0	116.8	115.7	113.5	111.3	109.1
57.5°	112.4	110.2	109.1	106.9	105.9	104.8	102.6	101.5	99.3	97.1	94.9
60°	98.2	96.0	94.9	92.8	91.7	91.7	89.5	87.3	86.2	84.0	81.8
62.5°	84.0	81.8	80.8	78.6	78.6	77.5	76.4	74.2	73.1	70.9	69.8
65°	70.9	69.8	67.7	66.6	65.5	64.4	63.3	62.2	60.0	58.9	56.7
67.5°	58.9	56.7	55.7	54.6	53.5	52.4	51.3	50.2	48.0	46.9	44.7
70°	46.9	45.8	44.7	43.7	42.6	42.6	40.4	39.3	37.1	36.0	33.8
72.5°	37.1	36.0	34.9	32.7	32.7	31.6	30.6	29.5	27.3	26.2	24.0
75°	27.3	27.3	25.1	24.0	24.0	22.9	21.8	20.7	19.6	17.5	16.4
77.5°	19.6	18.6	17.5	16.4	15.3	15.3	14.2	13.1	12.0	10.9	8.7
80°	13.1	12.0	10.9	9.8	9.8	8.7	7.6	7.6	6.5	5.5	4.4
82.5°	6.5	6.5	5.5	5.5	4.4	4.4	4.4	3.3	3.3	2.2	2.2
85°	3.3	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	0.0
87.5°	1.1	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°	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6
2.5°	340.5	339.4	340.5	340.5	339.4	339.4	339.4	339.4	338.3	339.4	338.3
5°	338.3	337.2	337.2	337.2	337.2	336.1	336.1	335.0	335.0	335.0	335.0
7.5°	333.9	332.9	332.9	331.8	331.8	331.8	331.8	330.7	330.7	329.6	329.6
10°	329.6	328.5	327.4	327.4	326.3	326.3	326.3	325.2	324.1	324.1	323.0
12.5°	321.9	321.9	320.8	320.8	319.8	319.8	318.7	317.6	317.6	316.5	316.5
15°	315.4	314.3	313.2	313.2	312.1	311.0	309.9	309.9	308.8	308.8	307.8
17.5°	306.7	304.5	304.5	303.4	302.3	302.3	301.2	300.1	299.0	299.0	299.0
20°	296.8	295.7	294.7	293.6	292.5	292.5	291.4	290.3	289.2	288.1	288.1
22.5°	285.9	284.8	283.7	282.7	282.7	281.6	280.5	279.4	278.3	277.2	277.2
25°	275.0	273.9	272.8	271.7	270.6	269.6	268.5	267.4	266.3	265.2	265.2
27.5°	263.0	260.8	259.7	258.6	257.6	256.5	256.5	254.3	254.3	253.2	252.1
30°	249.9	247.7	245.5	245.5	244.5	243.4	241.2	241.2	240.1	239.0	237.9
32.5°	235.7	234.6	232.5	232.5	230.3	229.2	228.1	227.0	225.9	224.8	224.8
35°	222.6	219.4	218.3	218.3	216.1	215.0	213.9	211.7	211.7	209.5	209.5
37.5°	208.4	206.3	205.2	203.0	201.9	200.8	199.7	197.5	196.4	195.3	194.3
40°	194.3	192.1	189.9	188.8	187.7	185.5	184.4	182.3	182.3	180.1	179.0
42.5°	179.0	176.8	174.6	173.5	172.4	170.2	169.2	167.0	165.9	164.8	163.7
45°	163.7	161.5	160.4	159.3	158.2	157.2	153.9	152.8	151.7	149.5	148.4
47.5°	149.5	147.3	145.1	145.1	143.0	141.9	139.7	137.5	136.4	134.2	133.1
50°	135.3	133.1	131.0	129.9	129.9	126.6	125.5	123.3	121.1	119.0	117.9
52.5°	121.1	119.0	116.8	115.7	114.6	112.4	110.2	109.1	106.9	104.8	103.7
55°	106.9	104.8	102.6	101.5	100.4	98.2	97.1	93.9	92.8	90.6	88.4
57.5°	93.9	91.7	89.5	88.4	87.3	85.1	82.9	80.8	79.7	77.5	75.3
60°	79.7	78.6	76.4	75.3	74.2	73.1	69.8	67.7	65.5	64.4	62.2
62.5°	67.7	65.5	63.3	62.2	61.1	60.0	57.8	55.7	54.6	51.3	49.1
65°	55.7	53.5	51.3	50.2	49.1	48.0	45.8	43.7	41.5	39.3	38.2
67.5°	42.6	41.5	39.3	39.3	38.2	36.0	33.8	32.7	30.6	29.5	27.3
70°	32.7	31.6	29.5	28.4	27.3	25.1	24.0	21.8	20.7	19.6	17.5
72.5°	22.9	21.8	19.6	18.6	17.5	16.4	14.2	13.1	12.0	10.9	9.8
75°	15.3	13.1	12.0	10.9	10.9	8.7	7.6	6.5	5.5	4.4	4.4
77.5°	8.7	7.6	5.5	5.5	5.5	4.4	3.3	3.3	2.2	2.2	2.2
80°	4.4	3.3	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	0.0	0.0	0.0	0.0	0.0	1.1	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: P642321

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	341.6	341.6	341.6	341.6	341.6	341.6	341.6	341.6
2.5°	338.3	338.3	338.3	338.3	338.3	338.3	338.3	338.3
5°	335.0	333.9	333.9	333.9	333.9	333.9	333.9	333.9
7.5°	329.6	329.6	328.5	329.6	328.5	328.5	328.5	328.5
10°	323.0	323.0	323.0	323.0	321.9	321.9	321.9	321.9
12.5°	316.5	315.4	315.4	315.4	314.3	315.4	314.3	314.3
15°	307.8	306.7	306.7	306.7	306.7	305.6	306.7	305.6
17.5°	297.9	297.9	296.8	297.9	296.8	296.8	296.8	296.8
20°	287.0	287.0	287.0	285.9	287.0	285.9	285.9	285.9
22.5°	276.1	276.1	275.0	275.0	275.0	275.0	275.0	275.0
25°	264.1	264.1	264.1	264.1	263.0	263.0	263.0	263.0
27.5°	252.1	251.0	251.0	251.0	249.9	251.0	249.9	249.9
30°	237.9	237.9	236.8	236.8	236.8	235.7	235.7	236.8
32.5°	222.6	222.6	222.6	222.6	221.5	221.5	221.5	221.5
35°	208.4	208.4	207.4	207.4	207.4	206.3	206.3	206.3
37.5°	193.2	193.2	192.1	192.1	192.1	191.0	191.0	192.1
40°	177.9	177.9	176.8	176.8	176.8	175.7	175.7	175.7
42.5°	162.6	161.5	161.5	160.4	160.4	160.4	159.3	159.3
45°	147.3	146.2	146.2	146.2	145.1	144.1	144.1	144.1
47.5°	132.0	131.0	129.9	129.9	128.8	128.8	128.8	129.9
50°	116.8	115.7	115.7	114.6	113.5	113.5	113.5	112.4
52.5°	101.5	100.4	100.4	99.3	99.3	98.2	97.1	97.1
55°	87.3	86.2	85.1	84.0	84.0	82.9	82.9	82.9
57.5°	73.1	72.0	70.9	70.9	69.8	69.8	68.8	67.7
60°	60.0	58.9	57.8	57.8	56.7	55.7	54.6	54.6
62.5°	48.0	46.9	45.8	44.7	43.7	42.6	41.5	42.6
65°	37.1	34.9	33.8	32.7	32.7	31.6	30.6	29.5
67.5°	26.2	25.1	24.0	22.9	21.8	20.7	19.6	19.6
70°	16.4	14.2	14.2	14.2	13.1	12.0	10.9	10.9
72.5°	8.7	7.6	6.5	6.5	5.5	5.5	5.5	5.5
75°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)