

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: P642320

Luminaire Tested: ML5612LSWW97FS1E - 692H WW - 600LM - 5000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642320
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 - 600LM - 5000K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH HAZE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 626.5 lumens
Efficiency: N/A
Efficacy: 60.8 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

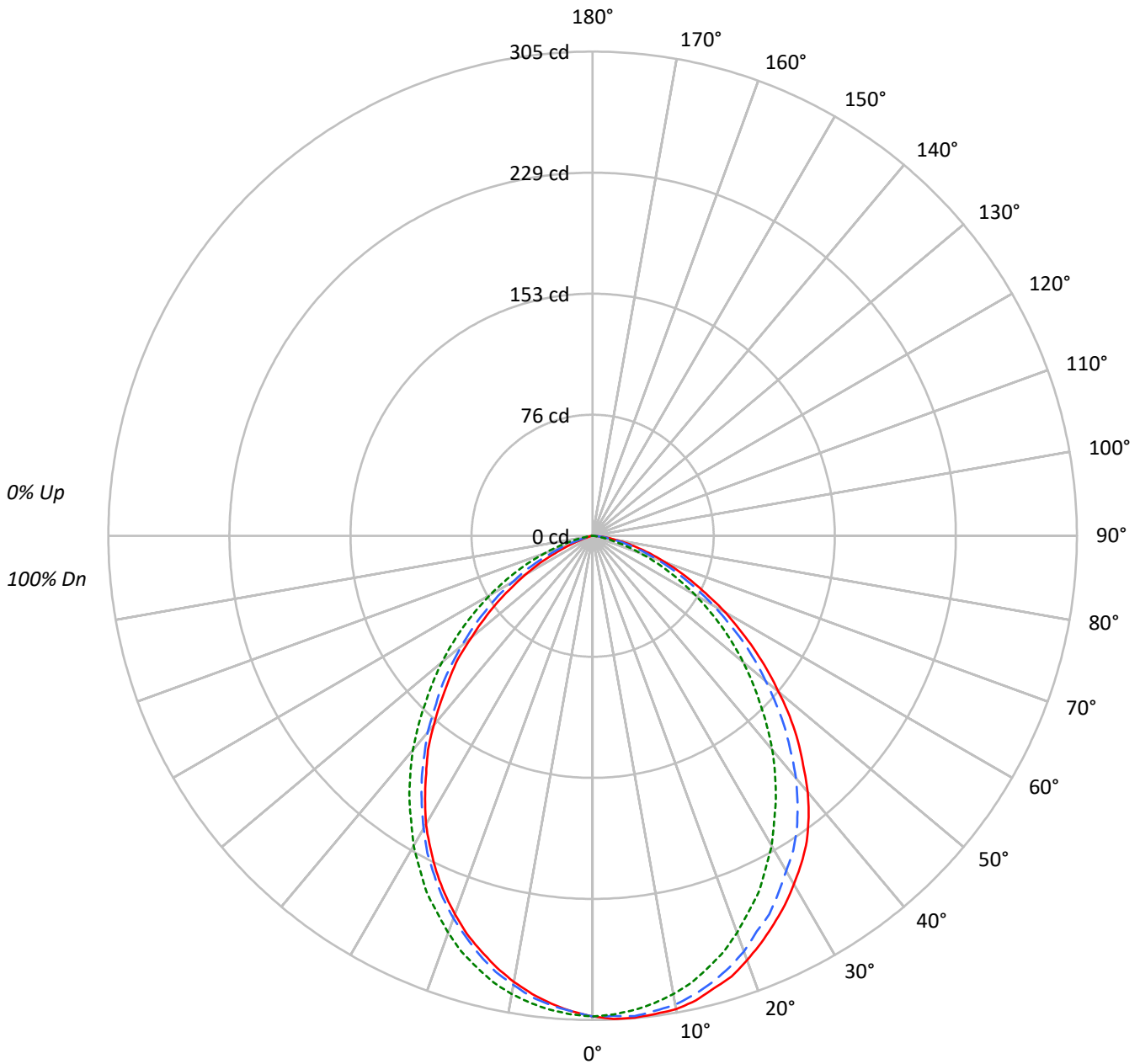
Input Watts (W): 10.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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									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°	16600	16600	16600	16600	16600
5°	16768	16718	16503	16344	16289
10°	16856	16694	16316	15993	15887
15°	16748	16527	15976	15539	15375
20°	16591	16253	15518	14958	14789
25°	16326	15914	14977	14275	14100
30°	16047	15433	14268	13470	13287
35°	15734	15018	13465	12561	12234
40°	15093	14262	12602	11565	11142
45°	14172	13273	11552	10427	9900
50°	13032	12128	10558	9160	8494
55°	11832	11001	9433	7856	7025
60°	10602	9648	8168	6359	5307
65°	9158	8276	6771	4774	3386
70°	7758	6828	5113	2949	1555
75°	6354	5338	3283	1017	614
80°	4578	3662	1515	316	316
85°	2453	1824	629	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 14172 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	28.4	4.5
10°-20°	79.5	12.7
20°-30°	114.6	18.3
30°-40°	128.1	20.4
40°-50°	117.4	18.7
50°-60°	88.2	14.1
60°-70°	50.4	8.0
70°-80°	17.6	2.8
80°-90°	2.3	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°	222.5	35.5
0°-40°	350.6	56.0
0°-60°	556.3	88.8
0°-90°	626.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	626.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	303	303	303	303	303	
5°	305	304	300	297	296	29
15°	295	291	282	274	271	83
25°	270	263	248	236	233	124
35°	235	224	201	188	183	146
45°	183	171	149	134	128	141
55°	124	115	99	82	74	111
65°	71	64	52	37	26	70
75°	30	25	16	5	3	32
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°	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8
2.5°	304.7	303.8	303.8	303.8	303.8	303.8	303.8	303.8	303.8	303.8	302.8
5°	304.7	304.7	304.7	304.7	304.7	304.7	304.7	303.8	303.8	303.8	303.8
7.5°	303.8	303.8	303.8	303.8	303.8	303.8	303.8	302.8	302.8	301.8	301.8
10°	302.8	302.8	302.8	301.8	301.8	301.8	301.8	301.8	300.9	300.9	299.9
12.5°	299.9	299.9	299.9	299.9	298.9	298.9	298.9	298.0	297.0	297.0	296.0
15°	295.1	296.0	296.0	295.1	295.1	295.1	295.1	294.1	293.1	292.1	291.2
17.5°	291.2	291.2	291.2	290.2	289.2	290.2	289.2	288.3	287.3	286.3	285.4
20°	284.4	284.4	283.4	283.4	283.4	283.4	282.5	281.5	280.5	279.6	278.6
22.5°	277.6	277.6	277.6	275.7	275.7	275.7	274.7	274.7	272.8	271.8	269.9
25°	269.9	269.9	269.9	268.9	268.0	267.0	268.0	266.0	265.1	263.1	263.1
27.5°	262.2	262.2	261.2	261.2	260.2	260.2	259.3	257.3	256.4	255.4	253.5
30°	253.5	253.5	252.5	252.5	251.5	250.6	250.6	248.6	247.6	245.7	243.8
32.5°	244.7	244.7	243.8	243.8	242.8	241.8	241.8	239.9	238.0	236.0	235.1
35°	235.1	235.1	234.1	234.1	233.1	232.2	231.2	229.3	228.3	225.4	224.4
37.5°	223.5	224.4	222.5	222.5	221.5	220.6	219.6	218.6	216.7	214.8	211.9
40°	210.9	209.9	209.9	209.0	208.0	208.0	207.0	205.1	204.1	201.2	199.3
42.5°	196.4	196.4	196.4	195.4	194.4	194.4	192.5	191.5	189.6	187.7	184.8
45°	182.8	182.8	181.9	181.9	179.9	179.9	179.0	177.0	176.1	173.2	171.2
47.5°	168.3	167.4	167.4	166.4	165.4	165.4	164.5	163.5	161.6	158.6	156.7
50°	152.8	152.8	152.8	151.9	150.9	150.9	149.9	148.0	147.0	145.1	142.2
52.5°	138.3	138.3	138.3	137.4	136.4	136.4	135.4	134.5	132.5	130.6	128.7
55°	123.8	123.8	123.8	122.9	122.9	120.9	120.9	120.0	118.0	116.1	115.1
57.5°	109.3	109.3	109.3	109.3	108.3	108.3	107.4	106.4	104.5	103.5	100.6
60°	96.7	95.8	95.8	94.8	94.8	93.8	92.9	91.9	90.9	89.0	88.0
62.5°	82.2	83.2	82.2	82.2	81.3	81.3	81.3	79.3	78.4	76.4	75.5
65°	70.6	70.6	70.6	70.6	68.7	68.7	68.7	66.7	65.8	65.8	63.8
67.5°	59.0	59.0	59.0	58.0	58.0	58.0	57.1	56.1	55.1	54.2	53.2
70°	48.4	48.4	48.4	47.4	47.4	46.4	46.4	45.5	44.5	44.5	42.6
72.5°	38.7	38.7	38.7	38.7	37.7	37.7	36.8	36.8	35.8	34.8	33.9
75°	30.0	30.0	30.0	29.0	29.0	29.0	28.1	28.1	27.1	26.1	25.2
77.5°	22.2	21.3	21.3	21.3	21.3	20.3	20.3	20.3	19.3	18.4	18.4
80°	14.5	14.5	14.5	14.5	14.5	13.5	13.5	13.5	12.6	12.6	11.6
82.5°	8.7	8.7	8.7	8.7	8.7	7.7	7.7	7.7	6.8	6.8	6.8
85°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	2.9	2.9	2.9
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8
2.5°	303.8	303.8	302.8	302.8	302.8	302.8	302.8	301.8	301.8	301.8	301.8
5°	303.8	302.8	301.8	301.8	301.8	301.8	300.9	300.9	300.9	299.9	299.9
7.5°	300.9	300.9	300.9	299.9	299.9	298.9	298.9	298.0	298.0	297.0	297.0
10°	298.9	298.0	298.0	297.0	297.0	296.0	296.0	294.1	293.1	293.1	292.1
12.5°	295.1	294.1	294.1	292.1	292.1	292.1	291.2	289.2	288.3	288.3	287.3
15°	290.2	289.2	288.3	286.3	286.3	285.4	284.4	283.4	282.5	281.5	280.5
17.5°	284.4	282.5	281.5	280.5	279.6	278.6	277.6	276.7	274.7	274.7	272.8
20°	277.6	275.7	274.7	272.8	271.8	271.8	269.9	268.0	267.0	266.0	264.1
22.5°	268.9	268.0	266.0	264.1	263.1	263.1	261.2	259.3	258.3	256.4	255.4
25°	261.2	258.3	257.3	255.4	254.4	254.4	252.5	250.6	248.6	247.6	245.7
27.5°	251.5	249.6	248.6	245.7	244.7	243.8	241.8	239.9	238.0	236.0	234.1
30°	241.8	239.9	238.0	235.1	235.1	233.1	231.2	228.3	227.3	225.4	222.5
32.5°	232.2	230.2	227.3	225.4	223.5	222.5	219.6	217.7	215.7	212.8	211.9
35°	221.5	218.6	216.7	213.8	212.8	210.9	209.0	206.1	204.1	201.2	198.3
37.5°	209.9	206.1	204.1	201.2	200.2	198.3	196.4	194.4	191.5	188.6	186.7
40°	197.3	193.5	190.6	188.6	186.7	184.8	183.8	179.9	178.0	176.1	174.1
42.5°	182.8	179.9	177.0	175.1	173.2	172.2	169.3	167.4	164.5	162.5	160.6
45°	169.3	166.4	163.5	160.6	159.6	158.6	156.7	153.8	150.9	149.0	147.0
47.5°	154.8	152.8	149.0	148.0	146.1	145.1	142.2	140.3	139.3	136.4	134.5
50°	140.3	138.3	136.4	133.5	132.5	131.6	129.6	127.7	125.8	123.8	121.9
52.5°	125.8	124.8	122.9	120.0	120.0	119.0	117.1	115.1	113.2	111.2	109.3
55°	113.2	111.2	109.3	107.4	106.4	105.4	103.5	102.5	100.6	98.7	96.7
57.5°	99.6	97.7	96.7	94.8	93.8	92.9	90.9	90.0	88.0	86.1	84.2
60°	87.1	85.1	84.2	82.2	81.3	81.3	79.3	77.4	76.4	74.5	72.6
62.5°	74.5	72.6	71.6	69.7	69.7	68.7	67.7	65.8	64.8	62.9	61.9
65°	62.9	61.9	60.0	59.0	58.0	57.1	56.1	55.1	53.2	52.2	50.3
67.5°	52.2	50.3	49.3	48.4	47.4	46.4	45.5	44.5	42.6	41.6	39.7
70°	41.6	40.6	39.7	38.7	37.7	37.7	35.8	34.8	32.9	31.9	30.0
72.5°	32.9	31.9	31.0	29.0	29.0	28.1	27.1	26.1	24.2	23.2	21.3
75°	24.2	24.2	22.2	21.3	21.3	20.3	19.3	18.4	17.4	15.5	14.5
77.5°	17.4	16.4	15.5	14.5	13.5	13.5	12.6	11.6	10.6	9.7	7.7
80°	11.6	10.6	9.7	8.7	8.7	7.7	6.8	6.8	5.8	4.8	3.9
82.5°	5.8	5.8	4.8	4.8	3.9	3.9	3.9	2.9	2.9	1.9	1.9
85°	2.9	1.9	1.9	1.9	1.9	1.9	1.0	1.0	1.0	1.0	0.0
87.5°	1.0	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°	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8
2.5°	301.8	300.9	301.8	301.8	300.9	300.9	300.9	300.9	299.9	300.9	299.9
5°	299.9	298.9	298.9	298.9	298.9	298.0	298.0	297.0	297.0	297.0	297.0
7.5°	296.0	295.1	295.1	294.1	294.1	294.1	294.1	293.1	293.1	292.1	292.1
10°	292.1	291.2	290.2	290.2	289.2	289.2	289.2	288.3	287.3	287.3	286.3
12.5°	285.4	285.4	284.4	284.4	283.4	283.4	282.5	281.5	281.5	280.5	280.5
15°	279.6	278.6	277.6	277.6	276.7	275.7	274.7	274.7	273.8	273.8	272.8
17.5°	271.8	269.9	269.9	268.9	268.0	268.0	267.0	266.0	265.1	265.1	265.1
20°	263.1	262.2	261.2	260.2	259.3	259.3	258.3	257.3	256.4	255.4	255.4
22.5°	253.5	252.5	251.5	250.6	250.6	249.6	248.6	247.6	246.7	245.7	245.7
25°	243.8	242.8	241.8	240.9	239.9	238.9	238.0	237.0	236.0	235.1	235.1
27.5°	233.1	231.2	230.2	229.3	228.3	227.3	227.3	225.4	225.4	224.4	223.5
30°	221.5	219.6	217.7	217.7	216.7	215.7	213.8	213.8	212.8	211.9	210.9
32.5°	209.0	208.0	206.1	206.1	204.1	203.1	202.2	201.2	200.2	199.3	199.3
35°	197.3	194.4	193.5	193.5	191.5	190.6	189.6	187.7	187.7	185.7	185.7
37.5°	184.8	182.8	181.9	179.9	179.0	178.0	177.0	175.1	174.1	173.2	172.2
40°	172.2	170.3	168.3	167.4	166.4	164.5	163.5	161.6	161.6	159.6	158.6
42.5°	158.6	156.7	154.8	153.8	152.8	150.9	149.9	148.0	147.0	146.1	145.1
45°	145.1	143.2	142.2	141.2	140.3	139.3	136.4	135.4	134.5	132.5	131.6
47.5°	132.5	130.6	128.7	128.7	126.7	125.8	123.8	121.9	120.9	119.0	118.0
50°	120.0	118.0	116.1	115.1	115.1	112.2	111.2	109.3	107.4	105.4	104.5
52.5°	107.4	105.4	103.5	102.5	101.6	99.6	97.7	96.7	94.8	92.9	91.9
55°	94.8	92.9	90.9	90.0	89.0	87.1	86.1	83.2	82.2	80.3	78.4
57.5°	83.2	81.3	79.3	78.4	77.4	75.5	73.5	71.6	70.6	68.7	66.7
60°	70.6	69.7	67.7	66.7	65.8	64.8	61.9	60.0	58.0	57.1	55.1
62.5°	60.0	58.0	56.1	55.1	54.2	53.2	51.3	49.3	48.4	45.5	43.5
65°	49.3	47.4	45.5	44.5	43.5	42.6	40.6	38.7	36.8	34.8	33.9
67.5°	37.7	36.8	34.8	34.8	33.9	31.9	30.0	29.0	27.1	26.1	24.2
70°	29.0	28.1	26.1	25.2	24.2	22.2	21.3	19.3	18.4	17.4	15.5
72.5°	20.3	19.3	17.4	16.4	15.5	14.5	12.6	11.6	10.6	9.7	8.7
75°	13.5	11.6	10.6	9.7	9.7	7.7	6.8	5.8	4.8	3.9	3.9
77.5°	7.7	6.8	4.8	4.8	4.8	3.9	2.9	2.9	1.9	1.9	1.9
80°	3.9	2.9	1.9	1.9	1.9	1.9	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	0.0	0.0	0.0	0.0	0.0	1.0	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: P642320

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 600LM - 5000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	302.8	302.8	302.8	302.8	302.8	302.8	302.8	302.8
2.5°	299.9	299.9	299.9	299.9	299.9	299.9	299.9	299.9
5°	297.0	296.0	296.0	296.0	296.0	296.0	296.0	296.0
7.5°	292.1	292.1	291.2	292.1	291.2	291.2	291.2	291.2
10°	286.3	286.3	286.3	286.3	285.4	285.4	285.4	285.4
12.5°	280.5	279.6	279.6	279.6	278.6	279.6	278.6	278.6
15°	272.8	271.8	271.8	271.8	271.8	270.9	271.8	270.9
17.5°	264.1	264.1	263.1	264.1	263.1	263.1	263.1	263.1
20°	254.4	254.4	254.4	253.5	254.4	253.5	253.5	253.5
22.5°	244.7	244.7	243.8	243.8	243.8	243.8	243.8	243.8
25°	234.1	234.1	234.1	234.1	233.1	233.1	233.1	233.1
27.5°	223.5	222.5	222.5	222.5	221.5	222.5	221.5	221.5
30°	210.9	210.9	209.9	209.9	209.9	209.0	209.0	209.9
32.5°	197.3	197.3	197.3	197.3	196.4	196.4	196.4	196.4
35°	184.8	184.8	183.8	183.8	183.8	182.8	182.8	182.8
37.5°	171.2	171.2	170.3	170.3	170.3	169.3	169.3	170.3
40°	157.7	157.7	156.7	156.7	156.7	155.7	155.7	155.7
42.5°	144.1	143.2	143.2	142.2	142.2	142.2	141.2	141.2
45°	130.6	129.6	129.6	129.6	128.7	127.7	127.7	127.7
47.5°	117.1	116.1	115.1	115.1	114.2	114.2	114.2	115.1
50°	103.5	102.5	102.5	101.6	100.6	100.6	100.6	99.6
52.5°	90.0	89.0	89.0	88.0	88.0	87.1	86.1	86.1
55°	77.4	76.4	75.5	74.5	74.5	73.5	73.5	73.5
57.5°	64.8	63.8	62.9	62.9	61.9	61.9	60.9	60.0
60°	53.2	52.2	51.3	51.3	50.3	49.3	48.4	48.4
62.5°	42.6	41.6	40.6	39.7	38.7	37.7	36.8	37.7
65°	32.9	31.0	30.0	29.0	29.0	28.1	27.1	26.1
67.5°	23.2	22.2	21.3	20.3	19.3	18.4	17.4	17.4
70°	14.5	12.6	12.6	12.6	11.6	10.6	9.7	9.7
72.5°	7.7	6.8	5.8	5.8	4.8	4.8	4.8	4.8
75°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)