

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: P642317

Luminaire Tested: ML5612LSWW97FS1E - 692H WW - 600LM - 3000K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642317  
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 - 3000K  
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH HAZE TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

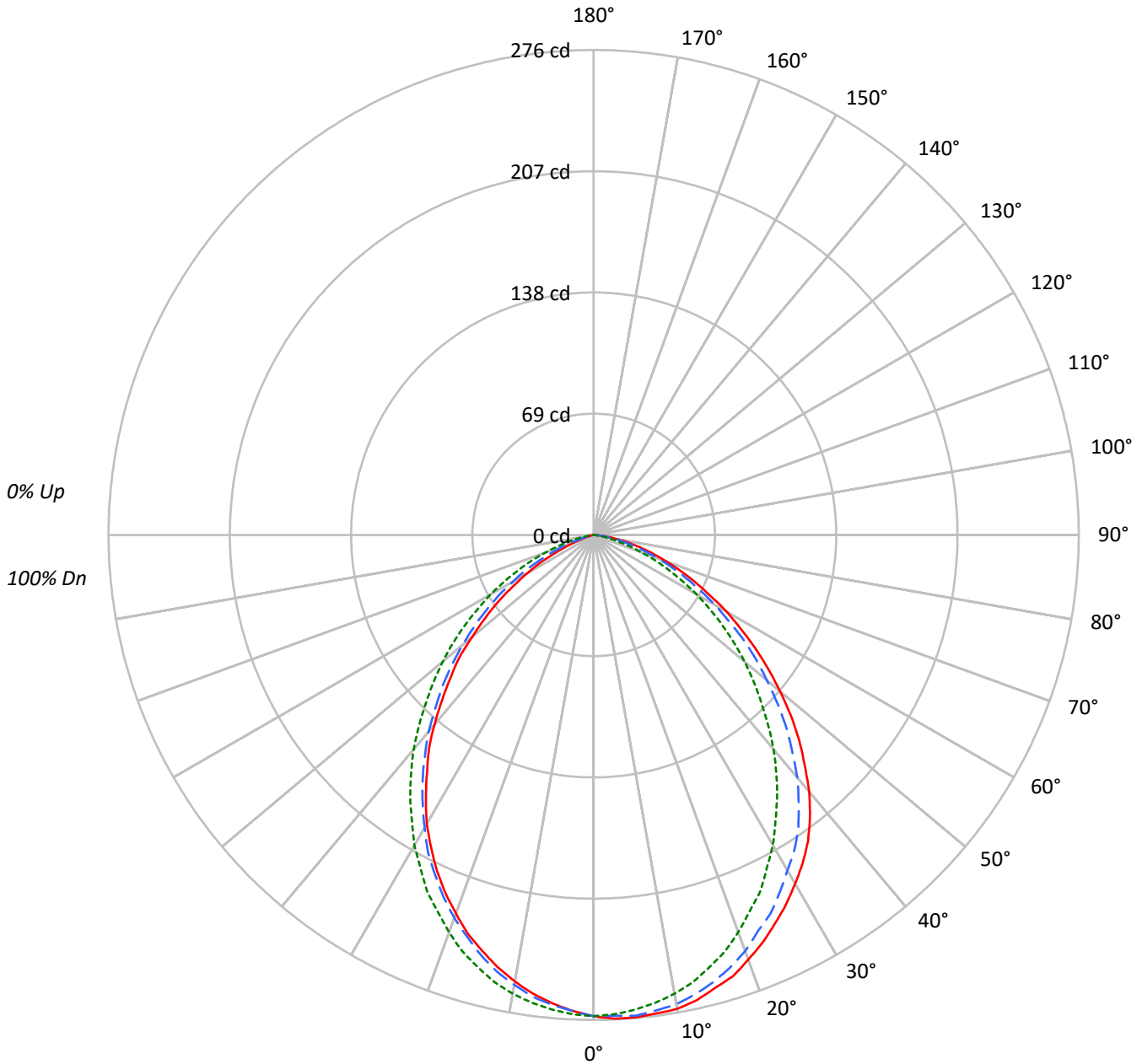
Lumens per Lamp: N/A  
Luminaire Lumens: 566.6 lumens  
Efficiency: N/A  
Efficacy: 55.0 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.12 / 1.23  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

Input Watts (W): 10.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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	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°	15015	15015	15015	15015	15015
5°	15166	15117	14924	14781	14731
10°	15247	15097	14757	14468	14367
15°	15148	14949	14450	14052	13905
20°	15005	14701	14036	13529	13371
25°	14765	14396	13549	12914	12757
30°	14509	13958	12907	12185	12021
35°	14228	13585	12180	11357	11069
40°	13647	12896	11393	10455	10083
45°	12823	12009	10443	9427	8954
50°	11786	10968	9552	8281	7684
55°	10705	9949	8525	7111	6356
60°	9594	8727	7390	5756	4791
65°	8289	7485	6123	4307	3061
70°	7004	6171	4632	2661	1394
75°	5740	4808	2965	932	551
80°	4136	3315	1389	284	284
85°	2201	1635	566	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 12823 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	25.7	4.5
10°-20°	71.9	12.7
20°-30°	103.6	18.3
30°-40°	115.8	20.4
40°-50°	106.2	18.7
50°-60°	79.8	14.1
60°-70°	45.5	8.0
70°-80°	15.9	2.8
80°-90°	2.1	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°	201.3	35.5
0°-40°	317.1	56.0
0°-60°	503.1	88.8
0°-90°	566.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	566.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	274	274	274	274	274	
5°	276	275	271	269	268	26
15°	267	263	255	248	245	75
25°	244	238	224	214	211	113
35°	213	203	182	170	165	132
45°	165	155	135	122	116	127
55°	112	104	89	74	66	100
65°	64	58	47	33	24	64
75°	27	23	14	4	3	29
85°	4	3	1	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°	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9
2.5°	275.6	274.7	274.7	274.7	274.7	274.7	274.7	274.7	274.7	274.7	273.9
5°	275.6	275.6	275.6	275.6	275.6	275.6	275.6	274.7	274.7	274.7	274.7
7.5°	274.7	274.7	274.7	274.7	274.7	274.7	274.7	273.9	273.9	273.0	273.0
10°	273.9	273.9	273.9	273.0	273.0	273.0	273.0	273.0	272.1	272.1	271.2
12.5°	271.2	271.2	271.2	271.2	270.4	270.4	270.4	269.5	268.6	268.6	267.7
15°	266.9	267.7	267.7	266.9	266.9	266.9	266.9	266.0	265.1	264.2	263.4
17.5°	263.4	263.4	263.4	262.5	261.6	262.5	261.6	260.7	259.9	259.0	258.1
20°	257.2	257.2	256.4	256.4	256.4	256.4	255.5	254.6	253.7	252.9	252.0
22.5°	251.1	251.1	251.1	249.4	249.4	249.4	248.5	248.5	246.7	245.9	244.1
25°	244.1	244.1	244.1	243.2	242.4	241.5	242.4	240.6	239.7	238.0	238.0
27.5°	237.1	237.1	236.2	236.2	235.4	235.4	234.5	232.7	231.9	231.0	229.2
30°	229.2	229.2	228.4	228.4	227.5	226.6	226.6	224.9	224.0	222.2	220.5
32.5°	221.4	221.4	220.5	220.5	219.6	218.7	218.7	217.0	215.2	213.5	212.6
35°	212.6	212.6	211.7	211.7	210.9	210.0	209.1	207.4	206.5	203.9	203.0
37.5°	202.1	203.0	201.2	201.2	200.4	199.5	198.6	197.7	196.0	194.2	191.6
40°	190.7	189.9	189.9	189.0	188.1	188.1	187.2	185.5	184.6	182.0	180.2
42.5°	177.6	177.6	177.6	176.7	175.9	175.9	174.1	173.2	171.5	169.7	167.1
45°	165.4	165.4	164.5	164.5	162.7	162.7	161.9	160.1	159.2	156.6	154.9
47.5°	152.2	151.4	151.4	150.5	149.6	149.6	148.7	147.9	146.1	143.5	141.7
50°	138.2	138.2	138.2	137.4	136.5	136.5	135.6	133.9	133.0	131.2	128.6
52.5°	125.1	125.1	125.1	124.2	123.4	123.4	122.5	121.6	119.9	118.1	116.4
55°	112.0	112.0	112.0	111.1	111.1	109.4	109.4	108.5	106.7	105.0	104.1
57.5°	98.9	98.9	98.9	98.9	98.0	98.0	97.1	96.2	94.5	93.6	91.0
60°	87.5	86.6	86.6	85.7	85.7	84.9	84.0	83.1	82.2	80.5	79.6
62.5°	74.4	75.2	74.4	74.4	73.5	73.5	73.5	71.7	70.9	69.1	68.2
65°	63.9	63.9	63.9	63.9	62.1	62.1	62.1	60.4	59.5	59.5	57.7
67.5°	53.4	53.4	53.4	52.5	52.5	52.5	51.6	50.7	49.9	49.0	48.1
70°	43.7	43.7	43.7	42.9	42.9	42.0	42.0	41.1	40.2	40.2	38.5
72.5°	35.0	35.0	35.0	35.0	34.1	34.1	33.2	33.2	32.4	31.5	30.6
75°	27.1	27.1	27.1	26.2	26.2	26.2	25.4	25.4	24.5	23.6	22.7
77.5°	20.1	19.2	19.2	19.2	19.2	18.4	18.4	18.4	17.5	16.6	16.6
80°	13.1	13.1	13.1	13.1	13.1	12.2	12.2	12.2	11.4	11.4	10.5
82.5°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.1	6.1	6.1
85°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.6	2.6	2.6
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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9
2.5°	274.7	274.7	273.9	273.9	273.9	273.9	273.9	273.0	273.0	273.0	273.0
5°	274.7	273.9	273.0	273.0	273.0	273.0	272.1	272.1	272.1	271.2	271.2
7.5°	272.1	272.1	272.1	271.2	271.2	270.4	270.4	269.5	269.5	268.6	268.6
10°	270.4	269.5	269.5	268.6	268.6	267.7	267.7	266.0	265.1	265.1	264.2
12.5°	266.9	266.0	266.0	264.2	264.2	264.2	263.4	261.6	260.7	260.7	259.9
15°	262.5	261.6	260.7	259.0	259.0	258.1	257.2	256.4	255.5	254.6	253.7
17.5°	257.2	255.5	254.6	253.7	252.9	252.0	251.1	250.2	248.5	248.5	246.7
20°	251.1	249.4	248.5	246.7	245.9	245.9	244.1	242.4	241.5	240.6	238.9
22.5°	243.2	242.4	240.6	238.9	238.0	238.0	236.2	234.5	233.6	231.9	231.0
25°	236.2	233.6	232.7	231.0	230.1	230.1	228.4	226.6	224.9	224.0	222.2
27.5°	227.5	225.7	224.9	222.2	221.4	220.5	218.7	217.0	215.2	213.5	211.7
30°	218.7	217.0	215.2	212.6	212.6	210.9	209.1	206.5	205.6	203.9	201.2
32.5°	210.0	208.2	205.6	203.9	202.1	201.2	198.6	196.9	195.1	192.5	191.6
35°	200.4	197.7	196.0	193.4	192.5	190.7	189.0	186.4	184.6	182.0	179.4
37.5°	189.9	186.4	184.6	182.0	181.1	179.4	177.6	175.9	173.2	170.6	168.9
40°	178.5	175.0	172.4	170.6	168.9	167.1	166.2	162.7	161.0	159.2	157.5
42.5°	165.4	162.7	160.1	158.4	156.6	155.7	153.1	151.4	148.7	147.0	145.2
45°	153.1	150.5	147.9	145.2	144.4	143.5	141.7	139.1	136.5	134.7	133.0
47.5°	140.0	138.2	134.7	133.9	132.1	131.2	128.6	126.9	126.0	123.4	121.6
50°	126.9	125.1	123.4	120.7	119.9	119.0	117.2	115.5	113.7	112.0	110.2
52.5°	113.7	112.9	111.1	108.5	108.5	107.6	105.9	104.1	102.4	100.6	98.9
55°	102.4	100.6	98.9	97.1	96.2	95.4	93.6	92.7	91.0	89.2	87.5
57.5°	90.1	88.4	87.5	85.7	84.9	84.0	82.2	81.4	79.6	77.9	76.1
60°	78.7	77.0	76.1	74.4	73.5	73.5	71.7	70.0	69.1	67.4	65.6
62.5°	67.4	65.6	64.7	63.0	63.0	62.1	61.2	59.5	58.6	56.9	56.0
65°	56.9	56.0	54.2	53.4	52.5	51.6	50.7	49.9	48.1	47.2	45.5
67.5°	47.2	45.5	44.6	43.7	42.9	42.0	41.1	40.2	38.5	37.6	35.9
70°	37.6	36.7	35.9	35.0	34.1	34.1	32.4	31.5	29.7	28.9	27.1
72.5°	29.7	28.9	28.0	26.2	26.2	25.4	24.5	23.6	21.9	21.0	19.2
75°	21.9	21.9	20.1	19.2	19.2	18.4	17.5	16.6	15.7	14.0	13.1
77.5°	15.7	14.9	14.0	13.1	12.2	12.2	11.4	10.5	9.6	8.7	7.0
80°	10.5	9.6	8.7	7.9	7.9	7.0	6.1	6.1	5.2	4.4	3.5
82.5°	5.2	5.2	4.4	4.4	3.5	3.5	3.5	2.6	2.6	1.7	1.7
85°	2.6	1.7	1.7	1.7	1.7	1.7	0.9	0.9	0.9	0.9	0.0
87.5°	0.9	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°	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9
2.5°	273.0	272.1	273.0	273.0	272.1	272.1	272.1	272.1	271.2	272.1	271.2
5°	271.2	270.4	270.4	270.4	270.4	269.5	269.5	268.6	268.6	268.6	268.6
7.5°	267.7	266.9	266.9	266.0	266.0	266.0	266.0	265.1	265.1	264.2	264.2
10°	264.2	263.4	262.5	262.5	261.6	261.6	261.6	260.7	259.9	259.9	259.0
12.5°	258.1	258.1	257.2	257.2	256.4	256.4	255.5	254.6	254.6	253.7	253.7
15°	252.9	252.0	251.1	251.1	250.2	249.4	248.5	248.5	247.6	247.6	246.7
17.5°	245.9	244.1	244.1	243.2	242.4	242.4	241.5	240.6	239.7	239.7	239.7
20°	238.0	237.1	236.2	235.4	234.5	234.5	233.6	232.7	231.9	231.0	231.0
22.5°	229.2	228.4	227.5	226.6	226.6	225.7	224.9	224.0	223.1	222.2	222.2
25°	220.5	219.6	218.7	217.9	217.0	216.1	215.2	214.4	213.5	212.6	212.6
27.5°	210.9	209.1	208.2	207.4	206.5	205.6	205.6	203.9	203.9	203.0	202.1
30°	200.4	198.6	196.9	196.9	196.0	195.1	193.4	193.4	192.5	191.6	190.7
32.5°	189.0	188.1	186.4	186.4	184.6	183.7	182.9	182.0	181.1	180.2	180.2
35°	178.5	175.9	175.0	175.0	173.2	172.4	171.5	169.7	169.7	168.0	168.0
37.5°	167.1	165.4	164.5	162.7	161.9	161.0	160.1	158.4	157.5	156.6	155.7
40°	155.7	154.0	152.2	151.4	150.5	148.7	147.9	146.1	146.1	144.4	143.5
42.5°	143.5	141.7	140.0	139.1	138.2	136.5	135.6	133.9	133.0	132.1	131.2
45°	131.2	129.5	128.6	127.7	126.9	126.0	123.4	122.5	121.6	119.9	119.0
47.5°	119.9	118.1	116.4	116.4	114.6	113.7	112.0	110.2	109.4	107.6	106.7
50°	108.5	106.7	105.0	104.1	104.1	101.5	100.6	98.9	97.1	95.4	94.5
52.5°	97.1	95.4	93.6	92.7	91.9	90.1	88.4	87.5	85.7	84.0	83.1
55°	85.7	84.0	82.2	81.4	80.5	78.7	77.9	75.2	74.4	72.6	70.9
57.5°	75.2	73.5	71.7	70.9	70.0	68.2	66.5	64.7	63.9	62.1	60.4
60°	63.9	63.0	61.2	60.4	59.5	58.6	56.0	54.2	52.5	51.6	49.9
62.5°	54.2	52.5	50.7	49.9	49.0	48.1	46.4	44.6	43.7	41.1	39.4
65°	44.6	42.9	41.1	40.2	39.4	38.5	36.7	35.0	33.2	31.5	30.6
67.5°	34.1	33.2	31.5	31.5	30.6	28.9	27.1	26.2	24.5	23.6	21.9
70°	26.2	25.4	23.6	22.7	21.9	20.1	19.2	17.5	16.6	15.7	14.0
72.5°	18.4	17.5	15.7	14.9	14.0	13.1	11.4	10.5	9.6	8.7	7.9
75°	12.2	10.5	9.6	8.7	8.7	7.0	6.1	5.2	4.4	3.5	3.5
77.5°	7.0	6.1	4.4	4.4	4.4	3.5	2.6	2.6	1.7	1.7	1.7
80°	3.5	2.6	1.7	1.7	1.7	1.7	0.9	0.9	0.9	0.9	0.9
82.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85°	0.0	0.0	0.0	0.0	0.0	0.9	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: P642317

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 600LM - 3000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	273.9	273.9	273.9	273.9	273.9	273.9	273.9	273.9
2.5°	271.2	271.2	271.2	271.2	271.2	271.2	271.2	271.2
5°	268.6	267.7	267.7	267.7	267.7	267.7	267.7	267.7
7.5°	264.2	264.2	263.4	264.2	263.4	263.4	263.4	263.4
10°	259.0	259.0	259.0	259.0	258.1	258.1	258.1	258.1
12.5°	253.7	252.9	252.9	252.9	252.0	252.9	252.0	252.0
15°	246.7	245.9	245.9	245.9	245.9	245.0	245.9	245.0
17.5°	238.9	238.9	238.0	238.9	238.0	238.0	238.0	238.0
20°	230.1	230.1	230.1	229.2	230.1	229.2	229.2	229.2
22.5°	221.4	221.4	220.5	220.5	220.5	220.5	220.5	220.5
25°	211.7	211.7	211.7	211.7	210.9	210.9	210.9	210.9
27.5°	202.1	201.2	201.2	201.2	200.4	201.2	200.4	200.4
30°	190.7	190.7	189.9	189.9	189.9	189.0	189.0	189.9
32.5°	178.5	178.5	178.5	178.5	177.6	177.6	177.6	177.6
35°	167.1	167.1	166.2	166.2	166.2	165.4	165.4	165.4
37.5°	154.9	154.9	154.0	154.0	154.0	153.1	153.1	154.0
40°	142.6	142.6	141.7	141.7	141.7	140.9	140.9	140.9
42.5°	130.4	129.5	129.5	128.6	128.6	128.6	127.7	127.7
45°	118.1	117.2	117.2	117.2	116.4	115.5	115.5	115.5
47.5°	105.9	105.0	104.1	104.1	103.2	103.2	103.2	104.1
50°	93.6	92.7	92.7	91.9	91.0	91.0	91.0	90.1
52.5°	81.4	80.5	80.5	79.6	79.6	78.7	77.9	77.9
55°	70.0	69.1	68.2	67.4	67.4	66.5	66.5	66.5
57.5°	58.6	57.7	56.9	56.9	56.0	56.0	55.1	54.2
60°	48.1	47.2	46.4	46.4	45.5	44.6	43.7	43.7
62.5°	38.5	37.6	36.7	35.9	35.0	34.1	33.2	34.1
65°	29.7	28.0	27.1	26.2	26.2	25.4	24.5	23.6
67.5°	21.0	20.1	19.2	18.4	17.5	16.6	15.7	15.7
70°	13.1	11.4	11.4	11.4	10.5	9.6	8.7	8.7
72.5°	7.0	6.1	5.2	5.2	4.4	4.4	4.4	4.4
75°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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)