

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: P642318

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

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642318
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 - 3500K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH HAZE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 582.1 lumens
Efficiency: N/A
Efficacy: 56.5 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

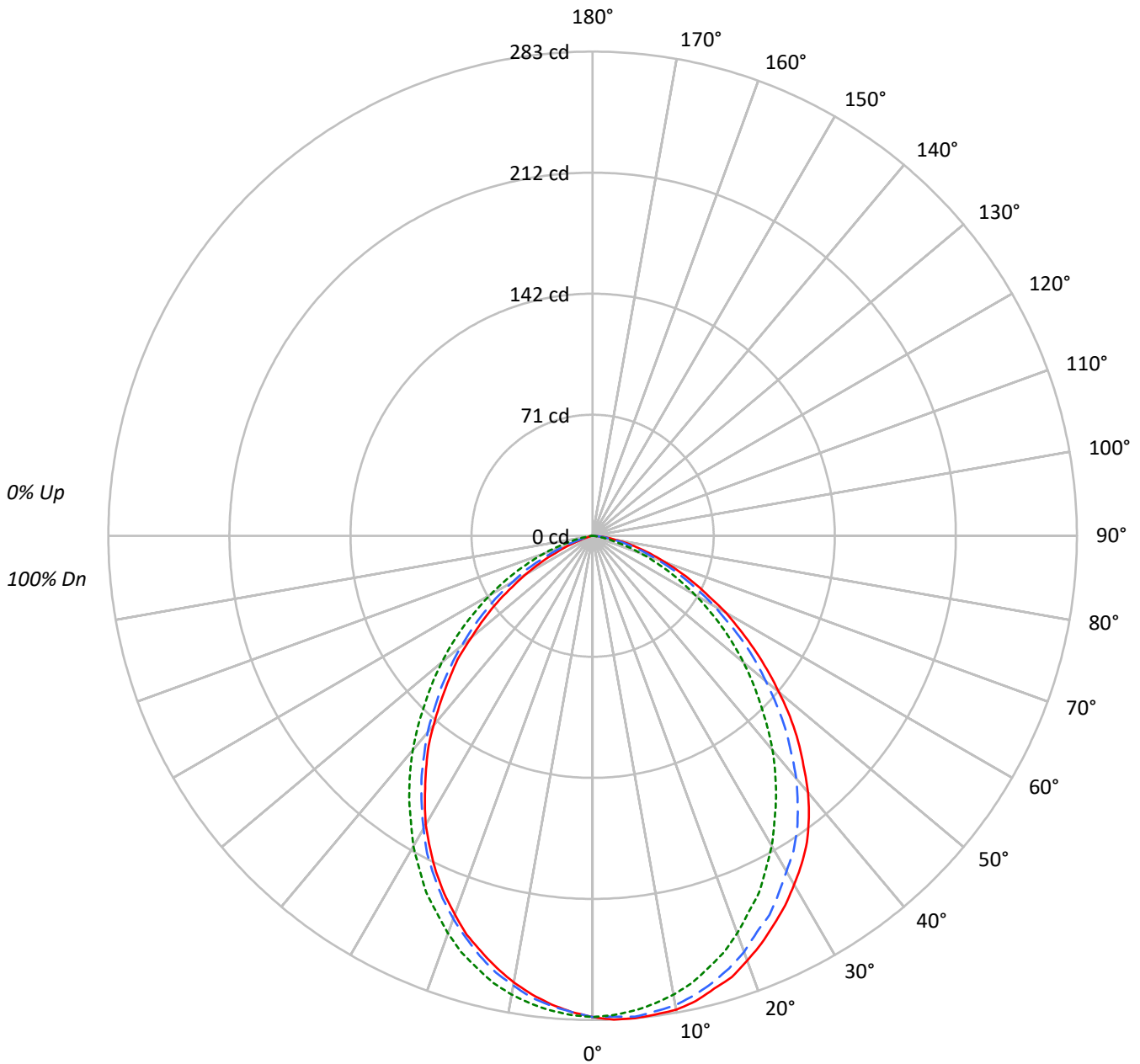
Input Watts (W): 10.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	15421	15421	15421	15421	15421
5°	15579	15529	15331	15183	15133
10°	15659	15509	15158	14857	14757
15°	15556	15352	14841	14433	14279
20°	15413	15098	14421	13896	13739
25°	15164	14789	13918	13265	13102
30°	14907	14338	13255	12515	12344
35°	14616	13953	12508	11671	11370
40°	14019	13246	11708	10742	10355
45°	13172	12335	10730	9683	9195
50°	12110	11266	9808	8511	7897
55°	10991	10227	8764	7302	6528
60°	9857	8969	7587	5910	4923
65°	8509	7692	6291	4436	3152
70°	7197	6331	4760	2741	1443
75°	5909	4956	3050	953	572
80°	4262	3410	1421	284	284
85°	2264	1698	566	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13172 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.4	4.5
10°-20°	73.9	12.7
20°-30°	106.5	18.3
30°-40°	119.0	20.4
40°-50°	109.1	18.7
50°-60°	82.0	14.1
60°-70°	46.8	8.0
70°-80°	16.3	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°	206.7	35.5
0°-40°	325.7	56.0
0°-60°	516.8	88.8
0°-90°	582.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	582.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	281	281	281	281	281	
5°	283	282	279	276	275	27
15°	274	270	262	254	252	77
25°	251	244	230	219	217	116
35°	218	208	187	174	170	136
45°	170	159	138	125	119	131
55°	115	107	92	76	68	103
65°	66	59	48	34	24	65
75°	28	23	14	4	3	30
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°	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3
2.5°	283.1	282.2	282.2	282.2	282.2	282.2	282.2	282.2	282.2	282.2	281.3
5°	283.1	283.1	283.1	283.1	283.1	283.1	283.1	282.2	282.2	282.2	282.2
7.5°	282.2	282.2	282.2	282.2	282.2	282.2	282.2	281.3	281.3	280.4	280.4
10°	281.3	281.3	281.3	280.4	280.4	280.4	280.4	280.4	279.5	279.5	278.6
12.5°	278.6	278.6	278.6	278.6	277.7	277.7	277.7	276.8	275.9	275.9	275.0
15°	274.1	275.0	275.0	274.1	274.1	274.1	274.1	273.2	272.3	271.4	270.5
17.5°	270.5	270.5	270.5	269.6	268.7	269.6	268.7	267.8	266.9	266.0	265.1
20°	264.2	264.2	263.3	263.3	263.3	263.3	262.4	261.5	260.6	259.7	258.8
22.5°	257.9	257.9	257.9	256.1	256.1	256.1	255.2	255.2	253.4	252.5	250.7
25°	250.7	250.7	250.7	249.9	249.0	248.1	249.0	247.2	246.3	244.5	244.5
27.5°	243.6	243.6	242.7	242.7	241.8	241.8	240.9	239.1	238.2	237.3	235.5
30°	235.5	235.5	234.6	234.6	233.7	232.8	232.8	231.0	230.1	228.3	226.5
32.5°	227.4	227.4	226.5	226.5	225.6	224.7	224.7	222.9	221.1	219.3	218.4
35°	218.4	218.4	217.5	217.5	216.6	215.7	214.8	213.0	212.1	209.4	208.5
37.5°	207.6	208.5	206.7	206.7	205.8	204.9	204.0	203.1	201.3	199.5	196.8
40°	195.9	195.0	195.0	194.1	193.2	193.2	192.3	190.5	189.6	186.9	185.1
42.5°	182.4	182.4	182.4	181.5	180.6	180.6	178.8	178.0	176.2	174.4	171.7
45°	169.9	169.9	169.0	169.0	167.2	167.2	166.3	164.5	163.6	160.9	159.1
47.5°	156.4	155.5	155.5	154.6	153.7	153.7	152.8	151.9	150.1	147.4	145.6
50°	142.0	142.0	142.0	141.1	140.2	140.2	139.3	137.5	136.6	134.8	132.1
52.5°	128.5	128.5	128.5	127.6	126.7	126.7	125.8	124.9	123.1	121.3	119.5
55°	115.0	115.0	115.0	114.1	114.1	112.3	112.3	111.4	109.6	107.8	107.0
57.5°	101.6	101.6	101.6	101.6	100.7	100.7	99.8	98.9	97.1	96.2	93.5
60°	89.9	89.0	89.0	88.1	88.1	87.2	86.3	85.4	84.5	82.7	81.8
62.5°	76.4	77.3	76.4	76.4	75.5	75.5	75.5	73.7	72.8	71.0	70.1
65°	65.6	65.6	65.6	65.6	63.8	63.8	63.8	62.0	61.1	61.1	59.3
67.5°	54.8	54.8	54.8	53.9	53.9	53.9	53.0	52.1	51.2	50.3	49.4
70°	44.9	44.9	44.9	44.0	44.0	43.1	43.1	42.2	41.3	41.3	39.5
72.5°	35.9	35.9	35.9	35.9	35.1	35.1	34.2	34.2	33.3	32.4	31.5
75°	27.9	27.9	27.9	27.0	27.0	27.0	26.1	26.1	25.2	24.3	23.4
77.5°	20.7	19.8	19.8	19.8	19.8	18.9	18.9	18.9	18.0	17.1	17.1
80°	13.5	13.5	13.5	13.5	13.5	12.6	12.6	12.6	11.7	11.7	10.8
82.5°	8.1	8.1	8.1	8.1	8.1	7.2	7.2	7.2	6.3	6.3	6.3
85°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	2.7	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3
2.5°	282.2	282.2	281.3	281.3	281.3	281.3	281.3	280.4	280.4	280.4	280.4
5°	282.2	281.3	280.4	280.4	280.4	280.4	279.5	279.5	279.5	278.6	278.6
7.5°	279.5	279.5	279.5	278.6	278.6	277.7	277.7	276.8	276.8	275.9	275.9
10°	277.7	276.8	276.8	275.9	275.9	275.0	275.0	273.2	272.3	272.3	271.4
12.5°	274.1	273.2	273.2	271.4	271.4	271.4	270.5	268.7	267.8	267.8	266.9
15°	269.6	268.7	267.8	266.0	266.0	265.1	264.2	263.3	262.4	261.5	260.6
17.5°	264.2	262.4	261.5	260.6	259.7	258.8	257.9	257.0	255.2	255.2	253.4
20°	257.9	256.1	255.2	253.4	252.5	252.5	250.7	249.0	248.1	247.2	245.4
22.5°	249.9	249.0	247.2	245.4	244.5	244.5	242.7	240.9	240.0	238.2	237.3
25°	242.7	240.0	239.1	237.3	236.4	236.4	234.6	232.8	231.0	230.1	228.3
27.5°	233.7	231.9	231.0	228.3	227.4	226.5	224.7	222.9	221.1	219.3	217.5
30°	224.7	222.9	221.1	218.4	218.4	216.6	214.8	212.1	211.2	209.4	206.7
32.5°	215.7	213.9	211.2	209.4	207.6	206.7	204.0	202.2	200.4	197.7	196.8
35°	205.8	203.1	201.3	198.6	197.7	195.9	194.1	191.4	189.6	186.9	184.2
37.5°	195.0	191.4	189.6	186.9	186.0	184.2	182.4	180.6	178.0	175.3	173.5
40°	183.3	179.7	177.1	175.3	173.5	171.7	170.8	167.2	165.4	163.6	161.8
42.5°	169.9	167.2	164.5	162.7	160.9	160.0	157.3	155.5	152.8	151.0	149.2
45°	157.3	154.6	151.9	149.2	148.3	147.4	145.6	142.9	140.2	138.4	136.6
47.5°	143.8	142.0	138.4	137.5	135.7	134.8	132.1	130.3	129.4	126.7	124.9
50°	130.3	128.5	126.7	124.0	123.1	122.2	120.4	118.6	116.8	115.0	113.2
52.5°	116.8	115.9	114.1	111.4	111.4	110.5	108.7	107.0	105.2	103.4	101.6
55°	105.2	103.4	101.6	99.8	98.9	98.0	96.2	95.3	93.5	91.7	89.9
57.5°	92.6	90.8	89.9	88.1	87.2	86.3	84.5	83.6	81.8	80.0	78.2
60°	80.9	79.1	78.2	76.4	75.5	75.5	73.7	71.9	71.0	69.2	67.4
62.5°	69.2	67.4	66.5	64.7	64.7	63.8	62.9	61.1	60.2	58.4	57.5
65°	58.4	57.5	55.7	54.8	53.9	53.0	52.1	51.2	49.4	48.5	46.7
67.5°	48.5	46.7	45.8	44.9	44.0	43.1	42.2	41.3	39.5	38.6	36.8
70°	38.6	37.7	36.8	35.9	35.1	35.1	33.3	32.4	30.6	29.7	27.9
72.5°	30.6	29.7	28.8	27.0	27.0	26.1	25.2	24.3	22.5	21.6	19.8
75°	22.5	22.5	20.7	19.8	19.8	18.9	18.0	17.1	16.2	14.4	13.5
77.5°	16.2	15.3	14.4	13.5	12.6	12.6	11.7	10.8	9.9	9.0	7.2
80°	10.8	9.9	9.0	8.1	8.1	7.2	6.3	6.3	5.4	4.5	3.6
82.5°	5.4	5.4	4.5	4.5	3.6	3.6	3.6	2.7	2.7	1.8	1.8
85°	2.7	1.8	1.8	1.8	1.8	1.8	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°	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3
2.5°	280.4	279.5	280.4	280.4	279.5	279.5	279.5	279.5	278.6	279.5	278.6
5°	278.6	277.7	277.7	277.7	277.7	276.8	276.8	275.9	275.9	275.9	275.9
7.5°	275.0	274.1	274.1	273.2	273.2	273.2	273.2	272.3	272.3	271.4	271.4
10°	271.4	270.5	269.6	269.6	268.7	268.7	268.7	267.8	266.9	266.9	266.0
12.5°	265.1	265.1	264.2	264.2	263.3	263.3	262.4	261.5	261.5	260.6	260.6
15°	259.7	258.8	257.9	257.9	257.0	256.1	255.2	255.2	254.3	254.3	253.4
17.5°	252.5	250.7	250.7	249.9	249.0	249.0	248.1	247.2	246.3	246.3	246.3
20°	244.5	243.6	242.7	241.8	240.9	240.9	240.0	239.1	238.2	237.3	237.3
22.5°	235.5	234.6	233.7	232.8	232.8	231.9	231.0	230.1	229.2	228.3	228.3
25°	226.5	225.6	224.7	223.8	222.9	222.0	221.1	220.2	219.3	218.4	218.4
27.5°	216.6	214.8	213.9	213.0	212.1	211.2	211.2	209.4	209.4	208.5	207.6
30°	205.8	204.0	202.2	202.2	201.3	200.4	198.6	198.6	197.7	196.8	195.9
32.5°	194.1	193.2	191.4	191.4	189.6	188.7	187.8	186.9	186.0	185.1	185.1
35°	183.3	180.6	179.7	179.7	178.0	177.1	176.2	174.4	174.4	172.6	172.6
37.5°	171.7	169.9	169.0	167.2	166.3	165.4	164.5	162.7	161.8	160.9	160.0
40°	160.0	158.2	156.4	155.5	154.6	152.8	151.9	150.1	150.1	148.3	147.4
42.5°	147.4	145.6	143.8	142.9	142.0	140.2	139.3	137.5	136.6	135.7	134.8
45°	134.8	133.0	132.1	131.2	130.3	129.4	126.7	125.8	124.9	123.1	122.2
47.5°	123.1	121.3	119.5	119.5	117.7	116.8	115.0	113.2	112.3	110.5	109.6
50°	111.4	109.6	107.8	107.0	107.0	104.3	103.4	101.6	99.8	98.0	97.1
52.5°	99.8	98.0	96.2	95.3	94.4	92.6	90.8	89.9	88.1	86.3	85.4
55°	88.1	86.3	84.5	83.6	82.7	80.9	80.0	77.3	76.4	74.6	72.8
57.5°	77.3	75.5	73.7	72.8	71.9	70.1	68.3	66.5	65.6	63.8	62.0
60°	65.6	64.7	62.9	62.0	61.1	60.2	57.5	55.7	53.9	53.0	51.2
62.5°	55.7	53.9	52.1	51.2	50.3	49.4	47.6	45.8	44.9	42.2	40.4
65°	45.8	44.0	42.2	41.3	40.4	39.5	37.7	35.9	34.2	32.4	31.5
67.5°	35.1	34.2	32.4	32.4	31.5	29.7	27.9	27.0	25.2	24.3	22.5
70°	27.0	26.1	24.3	23.4	22.5	20.7	19.8	18.0	17.1	16.2	14.4
72.5°	18.9	18.0	16.2	15.3	14.4	13.5	11.7	10.8	9.9	9.0	8.1
75°	12.6	10.8	9.9	9.0	9.0	7.2	6.3	5.4	4.5	3.6	3.6
77.5°	7.2	6.3	4.5	4.5	4.5	3.6	2.7	2.7	1.8	1.8	1.8
80°	3.6	2.7	1.8	1.8	1.8	1.8	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: P642318

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	281.3	281.3	281.3	281.3	281.3	281.3	281.3	281.3
2.5°	278.6	278.6	278.6	278.6	278.6	278.6	278.6	278.6
5°	275.9	275.0	275.0	275.0	275.0	275.0	275.0	275.0
7.5°	271.4	271.4	270.5	271.4	270.5	270.5	270.5	270.5
10°	266.0	266.0	266.0	266.0	265.1	265.1	265.1	265.1
12.5°	260.6	259.7	259.7	259.7	258.8	259.7	258.8	258.8
15°	253.4	252.5	252.5	252.5	252.5	251.6	252.5	251.6
17.5°	245.4	245.4	244.5	245.4	244.5	244.5	244.5	244.5
20°	236.4	236.4	236.4	235.5	236.4	235.5	235.5	235.5
22.5°	227.4	227.4	226.5	226.5	226.5	226.5	226.5	226.5
25°	217.5	217.5	217.5	217.5	216.6	216.6	216.6	216.6
27.5°	207.6	206.7	206.7	206.7	205.8	206.7	205.8	205.8
30°	195.9	195.9	195.0	195.0	195.0	194.1	194.1	195.0
32.5°	183.3	183.3	183.3	183.3	182.4	182.4	182.4	182.4
35°	171.7	171.7	170.8	170.8	170.8	169.9	169.9	169.9
37.5°	159.1	159.1	158.2	158.2	158.2	157.3	157.3	158.2
40°	146.5	146.5	145.6	145.6	145.6	144.7	144.7	144.7
42.5°	133.9	133.0	133.0	132.1	132.1	132.1	131.2	131.2
45°	121.3	120.4	120.4	120.4	119.5	118.6	118.6	118.6
47.5°	108.7	107.8	107.0	107.0	106.1	106.1	106.1	107.0
50°	96.2	95.3	95.3	94.4	93.5	93.5	93.5	92.6
52.5°	83.6	82.7	82.7	81.8	81.8	80.9	80.0	80.0
55°	71.9	71.0	70.1	69.2	69.2	68.3	68.3	68.3
57.5°	60.2	59.3	58.4	58.4	57.5	57.5	56.6	55.7
60°	49.4	48.5	47.6	47.6	46.7	45.8	44.9	44.9
62.5°	39.5	38.6	37.7	36.8	35.9	35.1	34.2	35.1
65°	30.6	28.8	27.9	27.0	27.0	26.1	25.2	24.3
67.5°	21.6	20.7	19.8	18.9	18.0	17.1	16.2	16.2
70°	13.5	11.7	11.7	11.7	10.8	9.9	9.0	9.0
72.5°	7.2	6.3	5.4	5.4	4.5	4.5	4.5	4.5
75°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
77.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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)