

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: P642303

Luminaire Tested: ML5612LSWW97FS1E - 592W WW - 600LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642303
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-116)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 592W WW - 600LM - 3500K
Description: ML56 RR, WW OPTIC, 5" 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: 564.5 lumens
Efficiency: N/A
Efficacy: 54.8 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.23
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

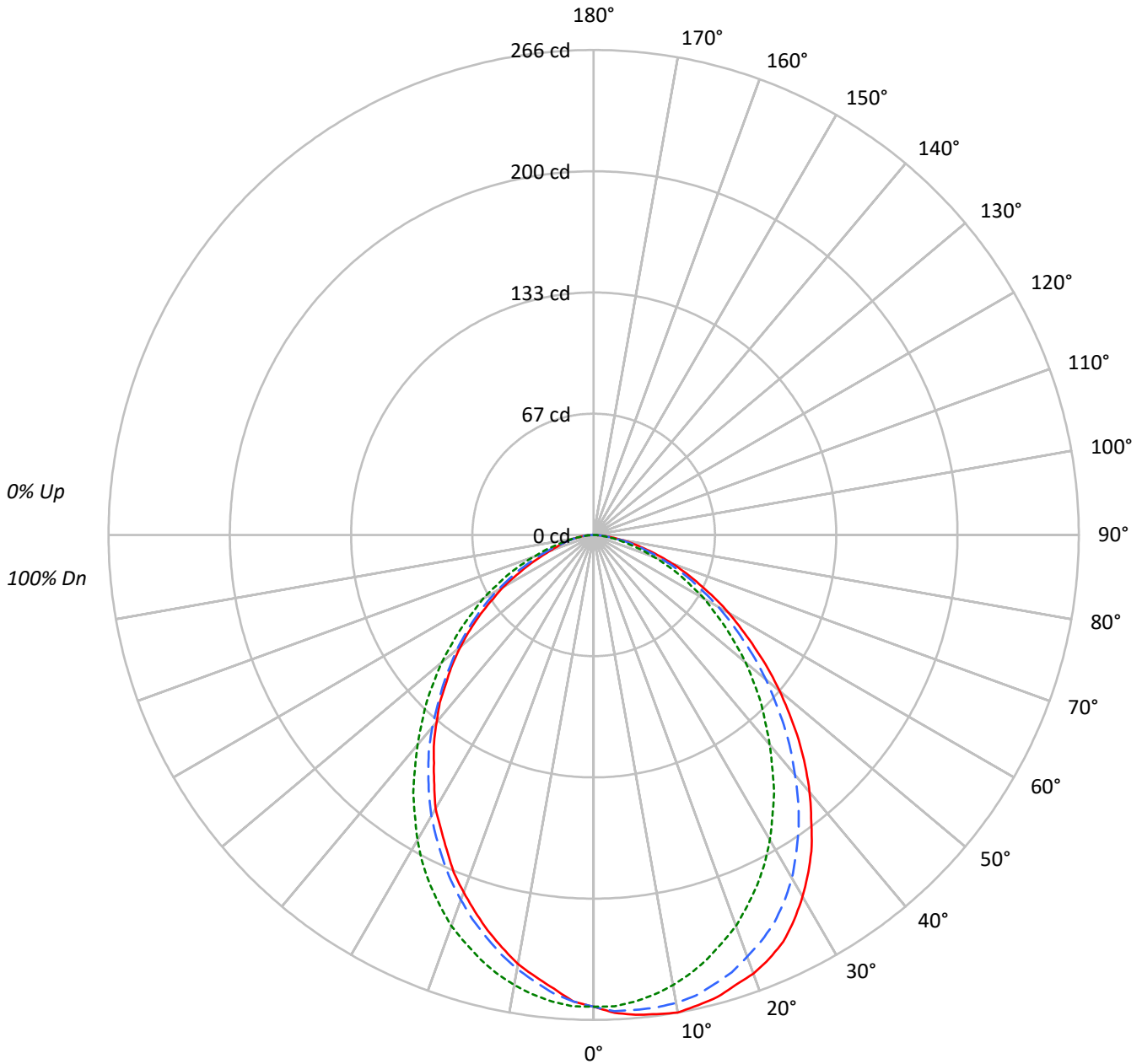
Input Watts (W): 10.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	88	86				86				
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	53	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43				43				
7	68	56	47	41	67	55	47	41	53	46	41	52	45	41	51	45	40	39				39				
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35				35				
9	60	47	39	34	58	46	39	34	45	38	34	44	38	33	43	37	33	32				32				
10	56	43	36	31	55	43	36	31	42	35	31	41	35	31	40	35	30	29				29				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	20430	20430	20430	20430	20430
5°	20936	20722	20365	20009	19795
10°	21322	20889	20096	19374	19158
15°	21445	20856	19680	18650	18356
20°	21514	20683	19170	17885	17515
25°	21444	20425	18466	17063	16593
30°	20883	19817	17611	16216	15806
35°	20093	18879	16624	15236	14716
40°	18982	17683	15468	14169	13798
45°	17751	16456	14446	13039	12738
50°	16334	15118	13349	12023	11692
55°	14836	13722	12125	10886	10391
60°	13483	12488	11068	9647	9078
65°	11917	11077	9732	8219	7378
70°	10571	9532	8078	6647	5816
75°	8784	7961	6314	5216	5216
80°	6955	6137	4910	4501	4501
85°	4076	4076	3261	4076	4076

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 17751 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.4	4.3
10°-20°	68.2	12.1
20°-30°	98.9	17.5
30°-40°	110.3	19.5
40°-50°	102.3	18.1
50°-60°	80.4	14.2
60°-70°	51.5	9.1
70°-80°	23.6	4.2
80°-90°	5.1	0.9
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°	191.4	33.9
0°-40°	301.7	53.4
0°-60°	484.4	85.8
0°-90°	564.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	564.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	259	259	259	259	259	
5°	264	262	257	252	250	25
15°	262	255	241	228	225	74
25°	246	234	212	196	190	113
35°	208	196	172	158	153	130
45°	159	147	129	117	114	122
55°	108	100	88	79	76	97
65°	64	59	52	44	40	64
75°	29	26	21	17	17	31
85°	4	4	4	4	4	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°	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8
2.5°	262.4	262.4	262.4	262.4	262.4	262.4	261.5	261.5	261.5	261.5	261.5
5°	264.2	264.2	264.2	264.2	263.3	263.3	263.3	263.3	262.4	262.4	261.5
7.5°	265.1	265.1	265.1	264.2	264.2	264.2	263.3	263.3	263.3	262.4	261.5
10°	266.0	265.1	265.1	264.2	264.2	264.2	263.3	263.3	262.4	261.5	260.6
12.5°	264.2	264.2	264.2	264.2	263.3	263.3	262.4	261.5	260.6	259.7	258.8
15°	262.4	262.4	262.4	261.5	260.6	260.6	259.7	258.8	257.9	257.0	255.2
17.5°	258.8	259.7	258.8	258.8	257.9	257.9	257.0	256.1	254.3	253.4	251.6
20°	256.1	255.2	255.2	255.2	254.3	253.4	252.5	251.6	249.8	248.9	246.2
22.5°	251.6	251.6	250.7	249.8	248.9	248.9	248.0	246.2	245.3	243.5	240.8
25°	246.2	245.3	245.3	244.4	243.5	243.5	241.7	240.8	239.0	236.3	234.5
27.5°	238.1	238.1	238.1	237.2	236.3	235.4	234.5	232.7	231.8	228.2	226.4
30°	229.1	229.1	228.2	228.2	226.4	226.4	225.5	223.7	221.9	219.2	217.4
32.5°	219.2	219.2	219.2	217.4	216.5	215.6	214.7	213.8	211.1	208.5	206.7
35°	208.5	208.5	207.6	206.7	205.8	204.9	204.0	202.2	200.4	198.6	195.9
37.5°	195.9	196.8	195.9	195.0	194.1	193.2	192.3	191.4	188.7	186.9	184.2
40°	184.2	184.2	183.3	182.4	181.5	181.5	180.6	178.8	177.0	174.3	171.6
42.5°	171.6	171.6	170.7	169.8	169.8	168.9	167.1	166.2	164.4	162.6	159.9
45°	159.0	158.1	157.2	157.2	156.3	155.4	155.4	153.6	151.8	149.2	147.4
47.5°	145.6	145.6	144.7	144.7	143.8	142.9	142.9	141.1	138.4	136.6	134.8
50°	133.0	133.0	132.1	132.1	131.2	130.3	129.4	128.5	126.7	124.9	123.1
52.5°	120.4	120.4	120.4	118.6	117.7	117.7	117.7	115.9	115.0	113.2	111.4
55°	107.8	107.8	107.8	106.9	106.0	106.0	106.0	104.2	103.3	101.5	99.7
57.5°	96.1	96.1	96.1	95.2	95.2	94.3	93.4	92.5	91.6	90.7	89.0
60°	85.4	85.4	84.5	83.6	84.5	83.6	82.7	81.8	80.9	80.0	79.1
62.5°	74.6	74.6	74.6	73.7	72.8	72.8	72.8	71.9	70.1	69.2	68.3
65°	63.8	63.8	63.8	63.8	62.9	62.9	62.0	61.1	61.1	60.2	59.3
67.5°	54.8	54.8	53.9	53.9	53.0	53.0	53.0	52.1	51.2	51.2	50.3
70°	45.8	44.9	44.9	44.9	44.0	44.0	44.0	43.1	43.1	42.2	41.3
72.5°	36.8	36.8	36.8	36.8	35.9	35.9	35.0	35.0	34.1	34.1	33.2
75°	28.8	28.8	28.8	28.8	27.9	27.9	27.9	27.9	27.0	27.0	26.1
77.5°	21.6	21.6	21.6	21.6	21.6	21.6	20.7	20.7	20.7	19.8	19.8
80°	15.3	15.3	15.3	15.3	14.4	14.4	14.4	14.4	14.4	13.5	13.5
82.5°	9.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.1
85°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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°	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8
2.5°	260.6	260.6	260.6	260.6	259.7	259.7	259.7	258.8	258.8	258.8	258.8
5°	261.5	261.5	259.7	259.7	259.7	259.7	258.8	258.8	257.9	257.0	256.1
7.5°	260.6	260.6	259.7	258.8	257.9	257.9	257.0	256.1	255.2	254.3	253.4
10°	259.7	258.8	257.9	257.0	256.1	255.2	254.3	253.4	251.6	250.7	249.8
12.5°	257.9	256.1	255.2	253.4	253.4	252.5	250.7	249.8	248.0	246.2	245.3
15°	254.3	252.5	250.7	248.9	248.9	247.1	245.3	244.4	242.6	240.8	239.0
17.5°	249.8	248.0	246.2	244.4	243.5	241.7	239.9	238.1	236.3	234.5	232.7
20°	245.3	242.6	240.8	238.1	237.2	236.3	233.6	231.8	230.0	228.2	225.5
22.5°	239.0	237.2	233.6	231.8	230.9	229.1	227.3	224.6	221.9	220.1	218.3
25°	231.8	230.0	227.3	224.6	222.8	221.9	219.2	216.5	214.7	212.0	210.3
27.5°	223.7	221.0	219.2	215.6	214.7	212.9	210.3	207.6	205.8	203.1	200.4
30°	214.7	212.0	209.4	206.7	204.9	204.0	201.3	198.6	195.9	193.2	191.4
32.5°	204.0	201.3	198.6	196.8	194.1	192.3	190.5	187.8	185.1	182.4	180.6
35°	193.2	190.5	187.8	185.1	183.3	183.3	179.7	177.0	174.3	172.5	169.8
37.5°	181.5	178.8	176.1	173.4	172.5	170.7	168.0	165.3	163.5	160.8	159.0
40°	169.8	166.2	164.4	161.7	160.8	159.0	157.2	154.5	152.7	150.1	148.3
42.5°	157.2	155.4	152.7	150.9	149.2	148.3	145.6	142.9	141.1	139.3	138.4
45°	145.6	142.9	140.2	138.4	137.5	135.7	134.8	132.1	130.3	129.4	127.6
47.5°	133.0	131.2	129.4	126.7	125.8	124.9	123.1	122.2	120.4	118.6	116.8
50°	121.3	119.5	117.7	115.9	115.0	115.0	112.3	110.5	109.6	108.7	106.9
52.5°	109.6	107.8	106.0	104.2	104.2	103.3	101.5	100.6	99.7	97.9	96.1
55°	98.8	97.0	95.2	94.3	93.4	93.4	91.6	90.7	89.0	88.1	87.2
57.5°	88.1	86.3	85.4	84.5	83.6	83.6	81.8	80.9	80.0	78.2	78.2
60°	78.2	76.4	75.5	74.6	73.7	72.8	72.8	71.0	70.1	70.1	68.3
62.5°	67.4	66.5	65.6	64.7	63.8	63.8	62.9	62.0	61.1	60.2	59.3
65°	58.4	57.5	56.6	55.7	54.8	54.8	53.9	53.0	52.1	52.1	50.3
67.5°	49.4	48.5	47.6	46.7	46.7	45.8	44.9	44.9	44.0	43.1	42.2
70°	40.4	40.4	39.5	38.6	38.6	37.7	36.8	36.8	35.9	35.0	34.1
72.5°	33.2	32.3	31.4	31.4	30.5	30.5	29.7	29.7	28.8	27.9	27.0
75°	25.2	24.3	24.3	24.3	23.4	23.4	23.4	22.5	21.6	20.7	20.7
77.5°	18.9	18.9	18.0	17.1	17.1	17.1	16.2	16.2	16.2	15.3	15.3
80°	13.5	12.6	12.6	11.7	11.7	11.7	11.7	10.8	10.8	10.8	9.9
82.5°	8.1	8.1	8.1	7.2	7.2	7.2	7.2	7.2	6.3	6.3	6.3
85°	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
87.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.8	1.8
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°	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8
2.5°	257.9	257.9	257.0	257.0	257.0	257.0	257.0	256.1	256.1	256.1	256.1
5°	256.1	255.2	254.3	254.3	254.3	253.4	253.4	252.5	252.5	251.6	251.6
7.5°	252.5	251.6	250.7	250.7	249.8	249.8	248.0	248.0	247.1	246.2	246.2
10°	248.0	247.1	246.2	245.3	245.3	243.5	243.5	242.6	241.7	240.8	240.8
12.5°	243.5	242.6	240.8	239.9	239.9	239.0	237.2	236.3	235.4	234.5	233.6
15°	237.2	236.3	234.5	233.6	232.7	231.8	230.9	230.0	228.2	227.3	227.3
17.5°	230.9	230.0	227.3	226.4	226.4	224.6	223.7	221.9	221.0	220.1	219.2
20°	223.7	221.9	220.1	219.2	218.3	216.5	215.6	214.7	212.9	212.0	211.1
22.5°	215.6	213.8	212.0	211.1	210.3	208.5	207.6	205.8	204.9	204.0	203.1
25°	207.6	205.8	204.0	203.1	201.3	200.4	198.6	196.8	195.9	195.0	194.1
27.5°	198.6	196.8	194.1	193.2	192.3	191.4	189.6	187.8	186.9	185.1	185.1
30°	188.7	186.9	185.1	184.2	183.3	181.5	180.6	178.8	177.9	176.1	176.1
32.5°	178.8	176.1	174.3	173.4	172.5	171.6	169.8	168.9	168.0	167.1	166.2
35°	168.0	166.2	164.4	163.5	162.6	160.8	159.9	159.0	158.1	156.3	156.3
37.5°	157.2	155.4	153.6	152.7	152.7	150.9	150.1	148.3	148.3	146.5	146.5
40°	146.5	144.7	142.9	142.9	142.0	140.2	139.3	138.4	137.5	136.6	136.6
42.5°	136.6	133.9	133.0	133.0	131.2	130.3	129.4	128.5	126.7	126.7	126.7
45°	125.8	124.0	123.1	122.2	121.3	120.4	119.5	117.7	116.8	115.9	115.9
47.5°	115.9	114.1	113.2	112.3	111.4	110.5	109.6	108.7	106.9	106.9	106.0
50°	106.0	104.2	103.3	102.4	101.5	100.6	99.7	98.8	97.9	97.0	96.1
52.5°	95.2	94.3	93.4	92.5	92.5	90.7	89.9	89.0	88.1	88.1	86.3
55°	86.3	85.4	84.5	83.6	82.7	81.8	80.9	80.0	79.1	78.2	77.3
57.5°	76.4	75.5	74.6	74.6	73.7	72.8	71.9	71.0	70.1	69.2	68.3
60°	67.4	66.5	65.6	65.6	64.7	63.8	62.9	62.9	61.1	60.2	59.3
62.5°	58.4	57.5	56.6	56.6	55.7	55.7	54.8	53.9	52.1	52.1	51.2
65°	50.3	49.4	48.5	47.6	47.6	46.7	45.8	44.9	44.0	44.0	43.1
67.5°	42.2	41.3	40.4	40.4	39.5	38.6	37.7	36.8	35.9	35.9	35.0
70°	34.1	33.2	32.3	32.3	31.4	30.5	30.5	29.7	28.8	27.9	27.9
72.5°	26.1	26.1	25.2	25.2	24.3	24.3	23.4	22.5	22.5	21.6	20.7
75°	19.8	19.8	18.9	18.9	18.0	18.0	17.1	17.1	17.1	16.2	17.1
77.5°	14.4	14.4	13.5	13.5	13.5	12.6	12.6	12.6	13.5	13.5	13.5
80°	9.9	9.9	9.9	9.9	9.0	9.0	9.9	9.9	9.9	9.9	9.9
82.5°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	7.2	7.2	7.2
85°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.5	4.5	4.5	4.5
87.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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: P642303

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 600LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	258.8	258.8	258.8	258.8	258.8	258.8	258.8	258.8
2.5°	255.2	255.2	255.2	255.2	255.2	255.2	255.2	256.1
5°	250.7	250.7	250.7	250.7	250.7	250.7	250.7	249.8
7.5°	246.2	245.3	245.3	245.3	245.3	244.4	244.4	244.4
10°	239.9	239.9	239.0	239.0	239.0	239.0	238.1	239.0
12.5°	233.6	232.7	232.7	232.7	231.8	231.8	231.8	231.8
15°	226.4	225.5	225.5	225.5	224.6	224.6	224.6	224.6
17.5°	218.3	218.3	217.4	217.4	216.5	216.5	216.5	216.5
20°	210.3	210.3	210.3	209.4	209.4	209.4	208.5	208.5
22.5°	202.2	201.3	200.4	201.3	200.4	199.5	200.4	200.4
25°	193.2	192.3	191.4	191.4	191.4	191.4	190.5	190.5
27.5°	184.2	182.4	182.4	182.4	182.4	181.5	181.5	181.5
30°	175.2	174.3	174.3	173.4	172.5	172.5	172.5	173.4
32.5°	165.3	164.4	163.5	163.5	163.5	163.5	162.6	162.6
35°	155.4	155.4	154.5	154.5	154.5	153.6	153.6	152.7
37.5°	145.6	145.6	144.7	144.7	144.7	143.8	143.8	143.8
40°	135.7	134.8	134.8	135.7	134.8	134.8	133.9	133.9
42.5°	125.8	125.8	124.9	124.9	124.9	124.9	124.0	124.9
45°	115.0	115.0	115.0	115.0	115.0	115.0	114.1	114.1
47.5°	106.0	105.1	105.1	105.1	105.1	105.1	105.1	105.1
50°	96.1	95.2	95.2	95.2	95.2	95.2	95.2	95.2
52.5°	86.3	85.4	85.4	85.4	85.4	85.4	85.4	85.4
55°	77.3	76.4	76.4	75.5	76.4	75.5	75.5	75.5
57.5°	68.3	67.4	66.5	67.4	66.5	66.5	66.5	65.6
60°	59.3	58.4	58.4	58.4	57.5	56.6	56.6	57.5
62.5°	50.3	50.3	49.4	49.4	48.5	47.6	47.6	47.6
65°	42.2	41.3	41.3	40.4	40.4	39.5	39.5	39.5
67.5°	34.1	34.1	33.2	33.2	32.3	32.3	32.3	31.4
70°	27.0	27.0	26.1	26.1	26.1	25.2	25.2	25.2
72.5°	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
75°	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1
77.5°	13.5	13.5	13.5	13.5	13.5	13.5	13.5	14.4
80°	9.9	9.9	10.8	9.9	10.8	9.9	9.9	9.9
82.5°	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
85°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
87.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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)