

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: P642349

Luminaire Tested: ML5612LSWW97FS1E - 692W WW - 600LM - 4000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642349
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-117)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 692W WW - 600LM - 4000K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 633.8 lumens
Efficiency: N/A
Efficacy: 61.5 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.25
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

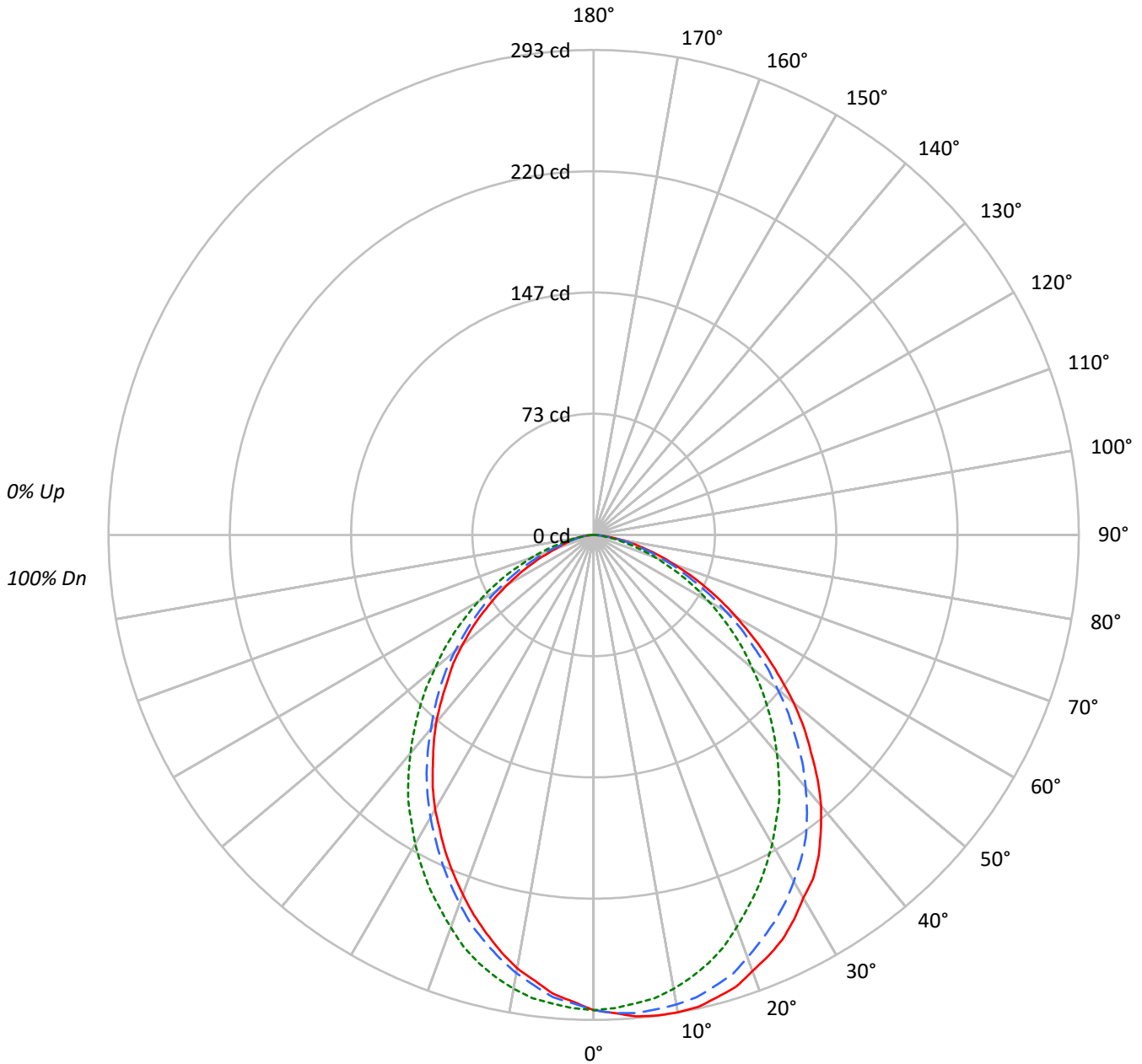
Input Watts (W): 10.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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								
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87								
2	101	94	88	82	99	92	86	81	88	84	80	85	81	78	82	79	76	74								
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66	64								
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	55								
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49								
6	73	61	52	46	72	60	52	46	58	51	46	56	50	45	55	49	45	43								
7	68	55	47	41	67	55	47	41	53	46	41	52	45	41	50	45	40	38								
8	64	51	43	37	62	50	42	37	49	42	37	48	41	37	46	41	36	35								
9	60	47	39	34	58	46	39	34	45	38	33	44	38	33	43	37	33	31								
10	56	43	36	31	55	43	36	31	42	35	30	41	35	30	40	34	30	29								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	15739	15739	15739	15739	15739
5°	16069	15959	15639	15430	15320
10°	16305	16037	15497	14963	14802
15°	16408	16022	15199	14433	14154
20°	16358	15851	14719	13820	13482
25°	16313	15612	14208	13156	12805
30°	16034	15300	13648	12483	12116
35°	15854	14944	13070	11778	11323
40°	15293	14255	12316	10935	10584
45°	14389	13342	11544	10195	9668
50°	13441	12366	10635	9313	8818
55°	12196	11268	9797	8411	7761
60°	10920	10065	8793	7423	6567
65°	9651	8782	7653	6265	5266
70°	8207	7597	6347	4809	3879
75°	6757	6142	4702	3283	3283
80°	5177	4578	3346	2747	3062
85°	3648	3019	2453	2453	2453

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 14389 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.0	4.3
10°-20°	75.5	11.9
20°-30°	109.3	17.3
30°-40°	124.2	19.6
40°-50°	117.2	18.5
50°-60°	92.4	14.6
60°-70°	57.9	9.1
70°-80°	25.0	3.9
80°-90°	5.2	0.8
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°	211.9	33.4
0°-40°	336.1	53.0
0°-60°	545.8	86.1
0°-90°	633.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	633.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	287	287	287	287	287	
5°	292	290	284	280	278	28
15°	289	282	268	254	249	82
25°	270	258	235	218	212	124
35°	237	223	195	176	169	147
45°	186	172	149	132	125	143
55°	128	118	102	88	81	114
65°	74	68	59	48	41	74
75°	32	29	22	16	16	35
85°	6	5	4	4	4	7
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°	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1
2.5°	289.1	289.1	290.0	290.0	289.1	289.1	289.1	289.1	289.1	289.1	289.1
5°	292.0	292.0	292.0	292.0	291.0	291.0	291.0	291.0	291.0	290.0	290.0
7.5°	292.9	292.9	292.9	292.9	292.0	292.0	291.0	291.0	291.0	290.0	289.1
10°	292.9	292.9	292.9	292.0	292.0	291.0	292.0	291.0	290.0	289.1	288.1
12.5°	292.0	291.0	291.0	291.0	290.0	290.0	290.0	289.1	288.1	287.1	286.2
15°	289.1	289.1	289.1	288.1	288.1	287.1	287.1	286.2	285.2	283.3	282.3
17.5°	286.2	286.2	285.2	285.2	284.2	283.3	283.3	282.3	281.3	279.4	278.4
20°	280.4	280.4	280.4	279.4	278.4	278.4	277.5	276.5	274.6	272.6	271.7
22.5°	275.5	274.6	274.6	273.6	272.6	272.6	271.7	269.7	268.8	266.8	264.9
25°	269.7	268.8	268.8	267.8	266.8	265.9	265.9	263.9	262.0	260.1	258.1
27.5°	262.0	262.0	261.0	260.1	259.1	259.1	258.1	257.2	254.3	252.3	250.4
30°	253.3	254.3	253.3	252.3	251.4	251.4	250.4	248.5	246.5	243.6	241.7
32.5°	246.5	246.5	245.6	244.6	242.7	242.7	242.7	239.8	237.8	235.9	233.0
35°	236.9	236.9	236.9	234.9	234.0	233.0	232.0	230.1	228.2	226.2	223.3
37.5°	225.3	226.2	225.3	224.3	223.3	222.4	221.4	219.5	216.6	214.6	211.7
40°	213.7	213.7	212.7	211.7	210.8	209.8	208.8	206.9	205.0	202.1	199.2
42.5°	200.1	200.1	199.2	198.2	197.2	196.3	196.3	194.3	191.4	189.5	186.6
45°	185.6	185.6	185.6	184.7	183.7	182.7	181.8	180.8	178.9	176.0	172.1
47.5°	172.1	172.1	172.1	170.2	170.2	168.2	167.3	165.3	164.4	161.5	159.5
50°	157.6	156.6	156.6	155.7	154.7	153.7	153.7	150.8	149.9	147.9	145.0
52.5°	142.1	142.1	142.1	141.1	140.2	139.2	139.2	137.3	135.3	133.4	132.4
55°	127.6	127.6	127.6	126.6	125.7	125.7	124.7	122.8	121.8	119.9	117.9
57.5°	113.1	114.1	113.1	112.1	112.1	111.2	111.2	110.2	108.3	106.3	105.4
60°	99.6	99.6	99.6	98.6	97.6	97.6	97.6	96.7	94.7	93.8	91.8
62.5°	87.0	87.0	86.0	86.0	85.1	85.1	84.1	83.1	82.2	81.2	80.2
65°	74.4	73.5	73.5	73.5	72.5	72.5	72.5	71.5	69.6	68.6	67.7
67.5°	62.8	62.8	61.9	61.9	60.9	60.9	60.9	59.9	59.0	58.0	57.0
70°	51.2	51.2	51.2	51.2	50.3	50.3	50.3	49.3	48.3	48.3	47.4
72.5°	41.6	41.6	41.6	41.6	40.6	40.6	40.6	39.6	38.7	37.7	37.7
75°	31.9	32.9	31.9	31.9	31.9	31.9	30.9	30.9	30.0	29.0	29.0
77.5°	24.2	24.2	24.2	24.2	23.2	23.2	23.2	23.2	22.2	21.3	21.3
80°	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	15.5	15.5	14.5
82.5°	9.7	10.6	10.6	10.6	9.7	9.7	9.7	9.7	9.7	9.7	8.7
85°	5.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
87.5°	1.9	1.9	1.9	1.9	1.9	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°	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1
2.5°	288.1	288.1	288.1	288.1	287.1	287.1	287.1	286.2	286.2	286.2	286.2
5°	289.1	288.1	288.1	287.1	287.1	287.1	286.2	286.2	285.2	284.2	284.2
7.5°	288.1	288.1	287.1	286.2	286.2	285.2	284.2	283.3	282.3	282.3	280.4
10°	287.1	286.2	285.2	284.2	283.3	283.3	281.3	280.4	279.4	278.4	277.5
12.5°	284.2	283.3	282.3	280.4	280.4	279.4	277.5	276.5	274.6	273.6	271.7
15°	280.4	279.4	278.4	276.5	275.5	274.6	272.6	270.7	268.8	267.8	265.9
17.5°	276.5	274.6	272.6	270.7	269.7	268.8	266.8	264.9	263.0	261.0	259.1
20°	269.7	267.8	265.9	263.0	262.0	261.0	258.1	256.2	254.3	252.3	250.4
22.5°	263.0	261.0	258.1	256.2	255.2	253.3	251.4	248.5	246.5	243.6	241.7
25°	256.2	253.3	250.4	248.5	246.5	245.6	242.7	240.7	236.9	234.9	233.0
27.5°	247.5	245.6	242.7	239.8	237.8	235.9	234.0	231.1	228.2	225.3	223.3
30°	238.8	235.9	233.0	231.1	228.2	227.2	224.3	221.4	218.5	215.6	213.7
32.5°	230.1	227.2	224.3	221.4	219.5	217.5	214.6	211.7	207.9	205.0	203.0
35°	220.4	217.5	213.7	210.8	208.8	206.9	204.0	201.1	198.2	195.3	192.4
37.5°	208.8	205.0	203.0	200.1	197.2	195.3	192.4	188.5	186.6	183.7	180.8
40°	196.3	193.4	190.5	187.6	184.7	183.7	179.8	176.9	175.0	172.1	169.2
42.5°	183.7	180.8	176.9	174.0	172.1	171.1	168.2	165.3	162.4	160.5	157.6
45°	170.2	167.3	164.4	161.5	159.5	158.6	155.7	153.7	150.8	148.9	146.0
47.5°	156.6	153.7	151.8	148.9	147.0	146.0	144.1	141.1	138.2	137.3	135.3
50°	143.1	140.2	138.2	135.3	134.4	133.4	131.5	129.5	127.6	124.7	123.7
52.5°	129.5	126.6	124.7	122.8	122.8	120.8	118.9	117.9	116.0	114.1	112.1
55°	116.0	115.0	113.1	110.2	110.2	109.2	107.3	105.4	103.4	102.5	100.5
57.5°	102.5	101.5	99.6	98.6	97.6	96.7	95.7	93.8	92.8	90.9	89.9
60°	90.9	89.9	88.0	87.0	86.0	85.1	84.1	82.2	81.2	80.2	79.3
62.5°	78.3	77.3	76.4	75.4	74.4	73.5	73.5	71.5	70.6	69.6	68.6
65°	67.7	65.7	64.8	63.8	63.8	62.8	61.9	60.9	59.9	59.0	58.0
67.5°	56.1	55.1	55.1	53.2	53.2	52.2	51.2	51.2	49.3	48.3	47.4
70°	46.4	45.4	44.5	43.5	43.5	42.5	41.6	40.6	39.6	39.6	38.7
72.5°	36.7	35.8	35.8	34.8	33.8	33.8	32.9	31.9	30.9	30.9	30.0
75°	28.0	27.1	27.1	26.1	26.1	25.1	24.2	24.2	23.2	22.2	21.3
77.5°	20.3	20.3	19.3	19.3	18.4	18.4	17.4	17.4	16.4	15.5	15.5
80°	14.5	13.5	13.5	12.6	12.6	12.6	11.6	11.6	10.6	10.6	9.7
82.5°	8.7	8.7	7.7	7.7	7.7	7.7	6.8	6.8	6.8	5.8	5.8
85°	4.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1
2.5°	285.2	285.2	284.2	285.2	284.2	284.2	284.2	284.2	283.3	283.3	283.3
5°	283.3	282.3	282.3	281.3	282.3	281.3	280.4	280.4	280.4	280.4	279.4
7.5°	279.4	279.4	278.4	277.5	277.5	276.5	275.5	275.5	274.6	274.6	273.6
10°	276.5	274.6	273.6	272.6	272.6	271.7	270.7	269.7	268.8	267.8	267.8
12.5°	269.7	268.8	267.8	266.8	266.8	264.9	263.9	263.0	262.0	261.0	260.1
15°	264.9	263.0	261.0	260.1	260.1	258.1	257.2	256.2	254.3	254.3	252.3
17.5°	257.2	255.2	253.3	252.3	251.4	250.4	249.4	247.5	246.5	244.6	244.6
20°	247.5	246.5	243.6	242.7	241.7	240.7	238.8	237.8	236.9	234.9	234.0
22.5°	239.8	236.9	234.9	234.0	234.0	231.1	230.1	228.2	227.2	226.2	224.3
25°	230.1	228.2	226.2	224.3	224.3	222.4	221.4	219.5	217.5	216.6	215.6
27.5°	220.4	218.5	215.6	214.6	213.7	212.7	210.8	208.8	206.9	205.9	205.0
30°	209.8	207.9	205.9	205.0	203.0	201.1	199.2	198.2	197.2	195.3	194.3
32.5°	200.1	197.2	195.3	193.4	193.4	190.5	189.5	187.6	186.6	185.6	183.7
35°	189.5	186.6	184.7	183.7	182.7	179.8	177.9	176.0	176.0	174.0	173.1
37.5°	177.9	175.0	174.0	172.1	171.1	169.2	167.3	166.3	164.4	162.4	162.4
40°	167.3	164.4	161.5	161.5	159.5	158.6	155.7	154.7	152.8	151.8	150.8
42.5°	155.7	152.8	150.8	149.9	148.9	147.0	145.0	143.1	142.1	141.1	140.2
45°	143.1	141.1	140.2	138.2	137.3	135.3	134.4	132.4	131.5	129.5	128.6
47.5°	132.4	130.5	128.6	127.6	126.6	124.7	123.7	121.8	120.8	118.9	117.9
50°	121.8	119.9	117.9	117.0	116.0	114.1	112.1	111.2	109.2	108.3	106.3
52.5°	110.2	108.3	106.3	106.3	105.4	103.4	102.5	100.5	98.6	96.7	95.7
55°	99.6	97.6	95.7	94.7	94.7	92.8	90.9	89.9	88.0	87.0	85.1
57.5°	88.0	86.0	85.1	84.1	84.1	82.2	81.2	79.3	78.3	76.4	75.4
60°	77.3	76.4	74.4	74.4	73.5	71.5	70.6	68.6	67.7	66.7	65.7
62.5°	66.7	65.7	63.8	63.8	62.8	61.9	60.9	59.0	58.0	56.1	55.1
65°	56.1	55.1	54.1	53.2	53.2	51.2	50.3	49.3	48.3	47.4	46.4
67.5°	46.4	45.4	44.5	44.5	43.5	42.5	40.6	39.6	38.7	37.7	36.7
70°	37.7	35.8	34.8	34.8	33.8	32.9	31.9	30.9	30.0	29.0	28.0
72.5°	29.0	27.1	27.1	26.1	25.1	24.2	24.2	23.2	22.2	22.2	20.3
75°	21.3	20.3	19.3	19.3	18.4	17.4	16.4	16.4	15.5	15.5	15.5
77.5°	14.5	13.5	13.5	12.6	12.6	12.6	11.6	11.6	11.6	11.6	12.6
80°	9.7	9.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	9.7	9.7
82.5°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	6.8
85°	2.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
87.5°	1.0	1.0	1.9	1.0	1.9	1.0	1.9	1.9	1.9	1.9	1.9
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: P642349

CATALOG NUMBER: ML5612LSWW97FS1E - 692W WW - 600LM - 4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	287.1	287.1	287.1	287.1	287.1	287.1	287.1	287.1
2.5°	282.3	283.3	283.3	282.3	283.3	282.3	282.3	282.3
5°	279.4	278.4	278.4	278.4	277.5	278.4	278.4	278.4
7.5°	273.6	273.6	272.6	272.6	271.7	271.7	272.6	271.7
10°	266.8	265.9	266.8	265.9	265.9	265.9	264.9	265.9
12.5°	260.1	259.1	259.1	258.1	258.1	258.1	258.1	258.1
15°	252.3	251.4	251.4	250.4	250.4	249.4	250.4	249.4
17.5°	243.6	243.6	241.7	241.7	241.7	241.7	241.7	240.7
20°	233.0	233.0	232.0	233.0	231.1	231.1	231.1	231.1
22.5°	224.3	223.3	222.4	222.4	222.4	221.4	221.4	221.4
25°	213.7	213.7	212.7	212.7	211.7	211.7	211.7	211.7
27.5°	204.0	203.0	203.0	203.0	202.1	201.1	201.1	201.1
30°	193.4	193.4	192.4	192.4	191.4	191.4	191.4	191.4
32.5°	182.7	182.7	181.8	180.8	180.8	180.8	179.8	180.8
35°	172.1	171.1	171.1	170.2	170.2	170.2	169.2	169.2
37.5°	161.5	160.5	159.5	160.5	159.5	158.6	158.6	158.6
40°	149.9	148.9	148.9	147.9	147.9	147.9	147.0	147.9
42.5°	139.2	139.2	138.2	137.3	137.3	137.3	136.3	136.3
45°	128.6	126.6	127.6	126.6	126.6	125.7	125.7	124.7
47.5°	117.0	116.0	116.0	116.0	115.0	115.0	115.0	115.0
50°	105.4	104.4	105.4	104.4	104.4	103.4	103.4	103.4
52.5°	94.7	93.8	93.8	93.8	93.8	92.8	92.8	92.8
55°	84.1	83.1	83.1	83.1	82.2	82.2	81.2	81.2
57.5°	74.4	73.5	72.5	71.5	71.5	71.5	70.6	70.6
60°	63.8	62.8	61.9	61.9	60.9	60.9	60.9	59.9
62.5°	54.1	53.2	52.2	52.2	51.2	50.3	50.3	50.3
65°	44.5	43.5	43.5	42.5	41.6	41.6	40.6	40.6
67.5°	35.8	34.8	34.8	33.8	32.9	31.9	31.9	31.9
70°	28.0	27.1	26.1	26.1	26.1	25.1	24.2	24.2
72.5°	20.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
75°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
77.5°	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
80°	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
82.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
85°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.0
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)