

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: P642283

Luminaire Tested: ML5612LSWW97FS1E - 592SC WW - 1200LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642283
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-129)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 592SC WW - 1200LM - 3500K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 904.7 lumens
Efficiency: N/A
Efficacy: 54.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.26
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

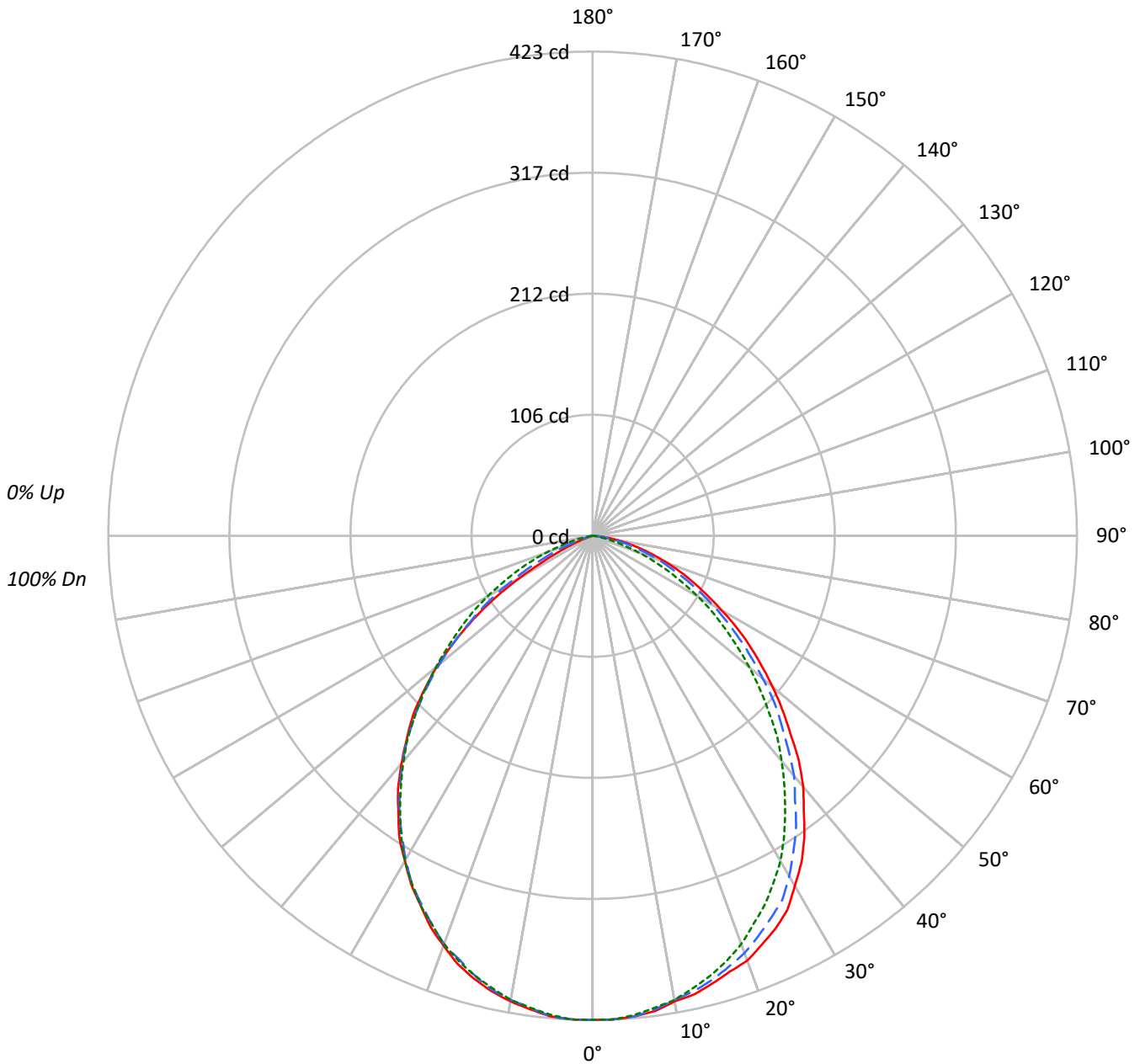
Input Watts (W): 16.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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					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	100	100	100	100		
	1	111	107	103	100	108	105	101	98	100	98	95	97	94	93	93	91	90	88	88	88	88	88	88		
	2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76	76	76	76	76	76		
	3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66	66	66	66	66	66		
	4	87	76	68	62	85	75	68	62	72	66	61	70	65	60	68	63	60	58	58	58	58	58	58		
	5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53	51	51	51	51	51	51		
	6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45	45	45	45	45	45		
	7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40	40	40	40	40	40		
	8	65	52	44	39	63	52	44	39	50	43	38	49	43	38	48	42	38	36	36	36	36	36	36		
	9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	35	33	33	33	33	33	33		
	10	57	45	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	33384	33384	33384	33384	33384
5°	33401	33401	33290	33401	33401
10°	33114	33001	33001	33001	33114
15°	33083	32854	32510	32510	32739
20°	33183	32595	31889	31889	32007
25°	32951	32097	30999	30878	30999
30°	32186	31302	29898	29771	29898
35°	31069	29865	28246	28381	28516
40°	29483	28194	26463	26608	26752
45°	27273	26023	24304	24304	24773
50°	25201	23825	21946	21430	21774
55°	23053	21511	19406	17864	17479
60°	20493	19167	16751	13878	11462
65°	18249	16680	13561	9134	5473
70°	16110	14172	9994	4501	1616
75°	13207	11072	5948	1281	427
80°	10138	7592	2546	0	0
85°	5072	3804	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 27430 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.9	4.4
10°-20°	112.8	12.5
20°-30°	166.3	18.4
30°-40°	188.3	20.8
40°-50°	173.9	19.2
50°-60°	128.5	14.2
60°-70°	69.1	7.6
70°-80°	23.1	2.6
80°-90°	2.9	0.3
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°	319.0	35.3
0°-40°	507.2	56.1
0°-60°	809.6	89.5
0°-90°	904.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	904.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	423	423	423	423	423	
5°	422	422	420	422	422	40
15°	405	402	398	398	401	114
25°	378	368	356	354	356	174
35°	322	310	293	294	296	201
45°	244	233	218	218	222	189
55°	168	156	141	130	127	150
65°	98	89	73	49	29	97
75°	43	36	20	4	1	47
85°	6	4	0	0	0	8
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°	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9
2.5°	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9
5°	421.5	421.5	420.1	421.5	421.5	421.5	421.5	420.1	421.5	421.5	421.5
7.5°	418.7	417.3	417.3	417.3	417.3	417.3	417.3	417.3	417.3	417.3	417.3
10°	413.1	413.1	413.1	413.1	413.1	413.1	413.1	413.1	413.1	413.1	411.7
12.5°	410.4	409.0	409.0	409.0	409.0	409.0	409.0	407.6	409.0	407.6	407.6
15°	404.8	404.8	404.8	404.8	404.8	404.8	403.4	403.4	403.4	403.4	402.0
17.5°	399.2	399.2	400.6	400.6	399.2	399.2	399.2	397.8	396.4	396.4	395.0
20°	395.0	395.0	393.6	393.6	392.2	393.6	392.2	390.8	390.8	389.4	388.0
22.5°	386.6	386.6	386.6	386.6	386.6	385.2	385.2	383.8	382.4	381.0	378.3
25°	378.3	378.3	378.3	378.3	376.9	376.9	376.9	374.1	372.7	371.3	368.5
27.5°	368.5	367.1	367.1	367.1	365.7	365.7	364.3	362.9	361.5	360.1	358.7
30°	353.1	353.1	353.1	353.1	351.7	350.3	350.3	348.9	347.5	344.8	343.4
32.5°	339.2	339.2	337.8	336.4	336.4	336.4	335.0	333.6	330.8	329.4	326.6
35°	322.4	321.0	321.0	319.6	319.6	319.6	318.2	315.4	314.0	312.7	309.9
37.5°	302.9	304.3	302.9	302.9	301.5	300.1	298.7	297.3	295.9	293.1	290.3
40°	286.1	286.1	284.7	283.3	281.9	281.9	280.5	279.2	277.8	276.4	273.6
42.5°	266.6	266.6	265.2	265.2	263.8	263.8	261.0	259.6	258.2	256.8	252.6
45°	244.3	244.3	245.7	244.3	242.9	241.5	241.5	240.1	237.3	235.9	233.1
47.5°	224.7	226.1	224.7	223.3	223.3	221.9	221.9	219.1	219.1	216.3	214.9
50°	205.2	205.2	205.2	205.2	203.8	202.4	202.4	201.0	198.2	196.8	194.0
52.5°	185.6	185.6	185.6	185.6	184.2	184.2	182.8	181.4	180.1	177.3	174.5
55°	167.5	166.1	166.1	166.1	164.7	164.7	163.3	161.9	160.5	159.1	156.3
57.5°	149.3	148.0	148.0	146.6	146.6	145.2	145.2	143.8	142.4	139.6	138.2
60°	129.8	131.2	129.8	129.8	128.4	128.4	128.4	127.0	124.2	122.8	121.4
62.5°	113.1	114.5	113.1	111.7	111.7	111.7	111.7	108.9	107.5	106.1	104.7
65°	97.7	97.7	97.7	96.3	96.3	96.3	93.5	93.5	92.1	90.7	89.3
67.5°	83.7	82.3	82.3	82.3	81.0	81.0	79.6	79.6	76.8	76.8	74.0
70°	69.8	68.4	68.4	68.4	67.0	65.6	67.0	64.2	62.8	61.4	61.4
72.5°	55.8	55.8	54.4	54.4	54.4	53.0	53.0	51.6	50.2	48.9	47.5
75°	43.3	43.3	43.3	41.9	41.9	40.5	40.5	39.1	39.1	36.3	36.3
77.5°	32.1	32.1	32.1	30.7	30.7	30.7	29.3	29.3	27.9	26.5	25.1
80°	22.3	20.9	20.9	20.9	20.9	19.5	19.5	19.5	18.1	18.1	16.7
82.5°	12.6	12.6	12.6	12.6	12.6	12.6	11.2	11.2	11.2	9.8	9.8
85°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.2	4.2	4.2
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9
2.5°	422.9	422.9	422.9	422.9	421.5	422.9	421.5	422.9	422.9	422.9	422.9
5°	421.5	420.1	420.1	420.1	421.5	421.5	420.1	420.1	420.1	420.1	420.1
7.5°	417.3	417.3	417.3	415.9	417.3	417.3	415.9	417.3	417.3	415.9	417.3
10°	413.1	413.1	411.7	411.7	411.7	411.7	411.7	411.7	410.4	411.7	411.7
12.5°	407.6	407.6	407.6	406.2	406.2	406.2	406.2	406.2	404.8	404.8	406.2
15°	402.0	402.0	400.6	400.6	400.6	399.2	399.2	399.2	399.2	397.8	397.8
17.5°	395.0	393.6	393.6	392.2	392.2	390.8	390.8	389.4	389.4	389.4	388.0
20°	386.6	385.2	383.8	383.8	382.4	382.4	381.0	381.0	379.6	379.6	378.3
22.5°	376.9	375.5	374.1	372.7	372.7	371.3	371.3	369.9	368.5	367.1	367.1
25°	368.5	365.7	364.3	362.9	360.1	360.1	358.7	358.7	357.3	355.9	354.5
27.5°	355.9	353.1	351.7	350.3	348.9	347.5	344.8	344.8	343.4	342.0	340.6
30°	340.6	339.2	336.4	335.0	333.6	333.6	330.8	328.0	328.0	328.0	326.6
32.5°	325.2	322.4	321.0	318.2	316.8	316.8	315.4	312.7	311.3	311.3	309.9
35°	308.5	305.7	302.9	301.5	300.1	298.7	297.3	295.9	294.5	293.1	291.7
37.5°	288.9	286.1	284.7	283.3	281.9	280.5	279.2	277.8	276.4	275.0	276.4
40°	270.8	268.0	265.2	263.8	262.4	262.4	261.0	259.6	258.2	256.8	256.8
42.5°	251.2	248.4	247.0	245.7	244.3	242.9	241.5	240.1	238.7	238.7	237.3
45°	230.3	228.9	226.1	224.7	223.3	223.3	220.5	219.1	219.1	217.7	217.7
47.5°	212.2	209.4	206.6	205.2	203.8	202.4	201.0	199.6	198.2	198.2	198.2
50°	191.2	189.8	187.0	185.6	184.2	184.2	182.8	181.4	180.1	178.7	178.7
52.5°	171.7	170.3	170.3	167.5	166.1	166.1	163.3	163.3	160.5	159.1	157.7
55°	154.9	152.1	150.7	148.0	148.0	146.6	145.2	143.8	142.4	141.0	139.6
57.5°	135.4	134.0	132.6	131.2	131.2	129.8	128.4	127.0	124.2	124.2	121.4
60°	120.0	117.2	115.8	114.5	113.1	113.1	111.7	110.3	107.5	106.1	104.7
62.5°	103.3	100.5	100.5	99.1	96.3	96.3	94.9	92.1	90.7	87.9	86.5
65°	87.9	86.5	83.7	82.3	82.3	81.0	78.2	76.8	75.4	72.6	69.8
67.5°	72.6	71.2	69.8	67.0	67.0	65.6	62.8	61.4	58.6	57.2	54.4
70°	58.6	57.2	55.8	53.0	53.0	51.6	50.2	47.5	44.7	43.3	40.5
72.5°	46.1	44.7	43.3	40.5	40.5	39.1	36.3	34.9	32.1	29.3	27.9
75°	34.9	33.5	30.7	29.3	27.9	27.9	25.1	23.7	22.3	19.5	18.1
77.5°	23.7	22.3	20.9	19.5	19.5	18.1	16.7	15.4	14.0	12.6	9.8
80°	15.4	14.0	12.6	12.6	11.2	11.2	9.8	8.4	7.0	5.6	4.2
82.5°	8.4	8.4	7.0	5.6	5.6	5.6	4.2	4.2	2.8	1.4	1.4
85°	2.8	2.8	2.8	2.8	1.4	1.4	1.4	1.4	1.4	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9
2.5°	422.9	422.9	422.9	422.9	422.9	422.9	421.5	422.9	422.9	422.9	421.5
5°	421.5	420.1	420.1	421.5	420.1	420.1	421.5	421.5	421.5	420.1	420.1
7.5°	415.9	417.3	415.9	415.9	417.3	417.3	417.3	417.3	415.9	415.9	417.3
10°	411.7	411.7	410.4	411.7	410.4	411.7	411.7	411.7	411.7	411.7	411.7
12.5°	404.8	404.8	404.8	406.2	404.8	404.8	406.2	406.2	406.2	406.2	406.2
15°	396.4	396.4	397.8	396.4	397.8	397.8	397.8	397.8	397.8	397.8	399.2
17.5°	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	389.4	389.4
20°	378.3	378.3	378.3	378.3	378.3	376.9	378.3	378.3	379.6	379.6	379.6
22.5°	365.7	365.7	365.7	365.7	365.7	365.7	365.7	365.7	367.1	368.5	367.1
25°	353.1	353.1	353.1	353.1	353.1	353.1	353.1	354.5	354.5	354.5	355.9
27.5°	340.6	340.6	340.6	339.2	340.6	339.2	340.6	340.6	342.0	340.6	342.0
30°	326.6	325.2	325.2	325.2	325.2	326.6	325.2	325.2	326.6	328.0	326.6
32.5°	308.5	308.5	308.5	309.9	309.9	309.9	311.3	309.9	309.9	311.3	311.3
35°	291.7	291.7	291.7	293.1	293.1	293.1	293.1	294.5	294.5	294.5	295.9
37.5°	273.6	275.0	273.6	275.0	275.0	276.4	276.4	276.4	276.4	277.8	277.8
40°	256.8	255.4	256.8	256.8	256.8	256.8	256.8	256.8	258.2	259.6	259.6
42.5°	237.3	237.3	237.3	237.3	237.3	237.3	238.7	238.7	238.7	240.1	240.1
45°	217.7	216.3	216.3	216.3	216.3	217.7	216.3	217.7	217.7	219.1	219.1
47.5°	196.8	196.8	196.8	196.8	196.8	196.8	196.8	196.8	196.8	198.2	196.8
50°	178.7	177.3	175.9	175.9	174.5	175.9	174.5	174.5	174.5	175.9	174.5
52.5°	157.7	156.3	154.9	154.9	154.9	153.5	152.1	152.1	152.1	150.7	150.7
55°	139.6	138.2	135.4	136.8	134.0	132.6	132.6	131.2	129.8	129.8	128.4
57.5°	120.0	118.6	117.2	115.8	115.8	113.1	111.7	110.3	108.9	107.5	104.7
60°	103.3	100.5	97.7	97.7	96.3	94.9	92.1	89.3	87.9	85.1	83.7
62.5°	85.1	82.3	79.6	78.2	76.8	75.4	72.6	69.8	67.0	65.6	62.8
65°	68.4	65.6	62.8	61.4	60.0	57.2	54.4	51.6	48.9	46.1	44.7
67.5°	51.6	48.9	47.5	44.7	43.3	40.5	37.7	36.3	33.5	30.7	26.5
70°	37.7	34.9	32.1	30.7	29.3	26.5	25.1	22.3	19.5	18.1	15.4
72.5°	25.1	22.3	20.9	19.5	18.1	16.7	14.0	12.6	9.8	8.4	7.0
75°	15.4	14.0	12.6	11.2	9.8	8.4	7.0	5.6	4.2	2.8	1.4
77.5°	8.4	7.0	5.6	5.6	4.2	2.8	2.8	1.4	1.4	1.4	1.4
80°	4.2	2.8	1.4	1.4	1.4	1.4	0.0	0.0	0.0	0.0	1.4
82.5°	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	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	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: P642283

CATALOG NUMBER: ML5612LSWW97FS1E - 592SC WW - 1200LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9
2.5°	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9
5°	421.5	421.5	420.1	421.5	420.1	420.1	420.1	421.5
7.5°	417.3	417.3	417.3	417.3	417.3	417.3	417.3	417.3
10°	411.7	411.7	411.7	413.1	413.1	413.1	411.7	413.1
12.5°	406.2	406.2	406.2	407.6	406.2	407.6	406.2	407.6
15°	399.2	399.2	400.6	400.6	399.2	399.2	400.6	400.6
17.5°	389.4	390.8	390.8	390.8	390.8	390.8	390.8	392.2
20°	381.0	381.0	379.6	381.0	381.0	382.4	382.4	381.0
22.5°	367.1	369.9	369.9	369.9	369.9	369.9	369.9	369.9
25°	355.9	355.9	355.9	357.3	355.9	355.9	357.3	355.9
27.5°	342.0	343.4	342.0	343.4	343.4	343.4	343.4	343.4
30°	328.0	328.0	328.0	328.0	328.0	329.4	328.0	328.0
32.5°	311.3	312.7	312.7	312.7	314.0	312.7	312.7	314.0
35°	295.9	295.9	295.9	297.3	295.9	297.3	297.3	295.9
37.5°	277.8	279.2	277.8	279.2	279.2	279.2	279.2	279.2
40°	261.0	259.6	261.0	259.6	261.0	261.0	261.0	259.6
42.5°	240.1	241.5	241.5	241.5	241.5	241.5	241.5	240.1
45°	219.1	220.5	220.5	220.5	220.5	220.5	221.9	221.9
47.5°	196.8	199.6	199.6	199.6	198.2	201.0	199.6	199.6
50°	174.5	174.5	175.9	175.9	177.3	177.3	177.3	177.3
52.5°	152.1	150.7	152.1	152.1	153.5	152.1	153.5	152.1
55°	127.0	127.0	127.0	125.6	127.0	127.0	127.0	127.0
57.5°	104.7	103.3	101.9	100.5	100.5	100.5	99.1	100.5
60°	81.0	78.2	79.6	76.8	75.4	74.0	74.0	72.6
62.5°	60.0	57.2	55.8	54.4	51.6	48.9	48.9	47.5
65°	40.5	37.7	36.3	33.5	32.1	30.7	29.3	29.3
67.5°	25.1	22.3	22.3	20.9	19.5	18.1	16.7	16.7
70°	14.0	12.6	11.2	9.8	9.8	8.4	7.0	7.0
72.5°	5.6	4.2	4.2	2.8	2.8	2.8	2.8	1.4
75°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)