

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: P642325

Luminaire Tested: ML5612LSWW97FS1E - 692H WW - 900LM - 5000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642325
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 - 900LM - 5000K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH HAZE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 803.8 lumens
Efficiency: N/A
Efficacy: 60.4 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

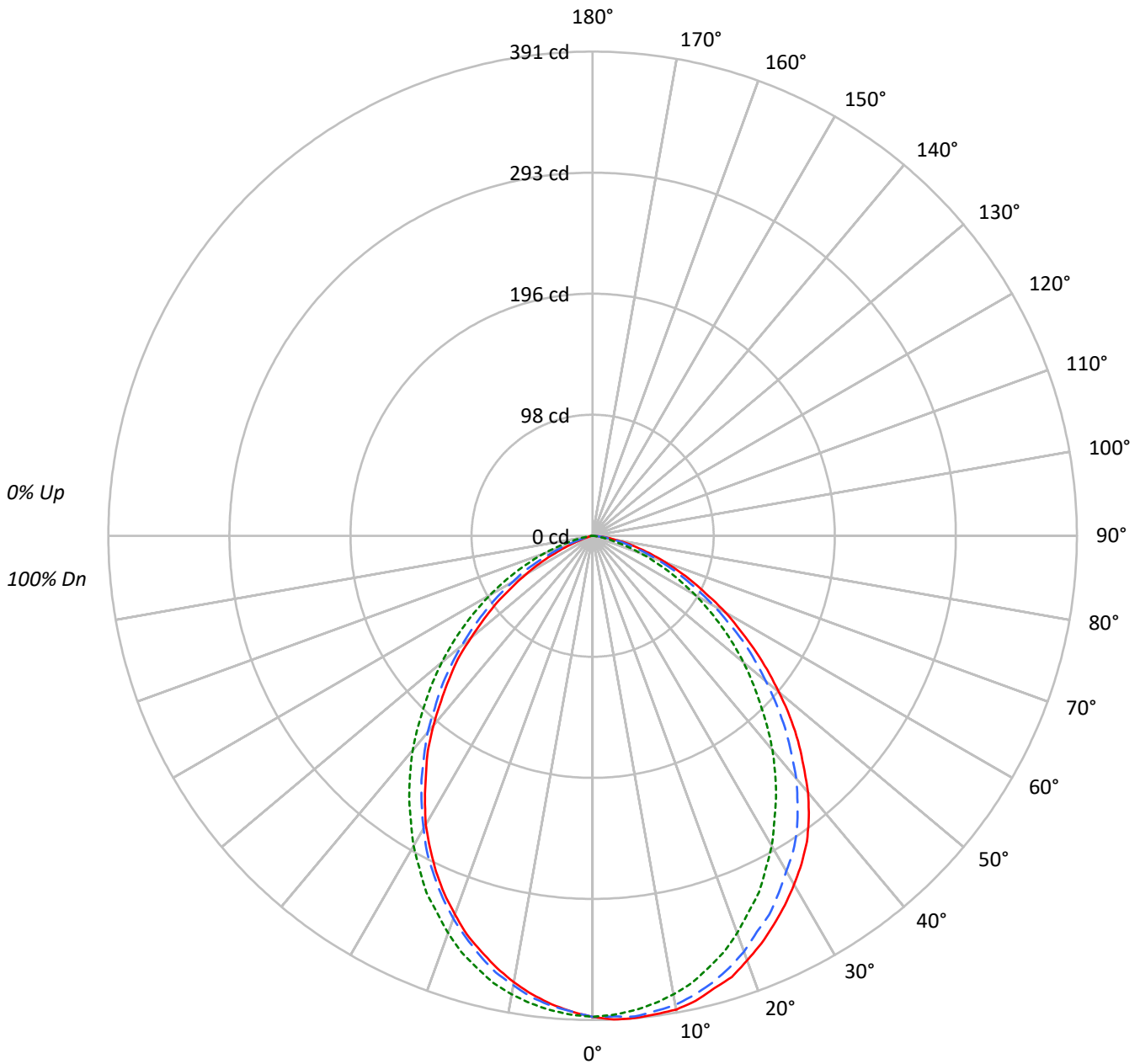
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
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	104	101	98	100	98	95	96	94	92	93	91	90	88	88	88	88	88	88		
	2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	84	80	78	76	76	76	76	76	76		
	3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66	66	66	66	66	66		
	4	87	76	68	62	85	75	67	62	72	66	61	70	65	60	68	63	59	57	57	57	57	57	57		
	5	80	69	60	54	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	37	32	42	36	32	41	36	32	30	30	30	30	30	30		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	21298	21298	21298	21298	21298
5°	21517	21445	21170	20966	20900
10°	21626	21415	20936	20518	20379
15°	21481	21203	20500	19932	19722
20°	21288	20850	19911	19188	18972
25°	20947	20421	19217	18316	18092
30°	20585	19801	18307	17281	17047
35°	20184	19267	17280	16115	15700
40°	19365	18299	16166	14835	14298
45°	18188	17033	14815	13373	12699
50°	16724	15556	13552	11752	10899
55°	15187	14117	12100	10083	9013
60°	13606	12378	10482	8168	6809
65°	11752	10624	8691	6123	4345
70°	9954	8751	6572	3783	1988
75°	8155	6841	4215	1313	784
80°	5872	4704	1957	379	379
85°	3145	2327	755	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 18188 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.5	4.5
10°-20°	102.0	12.7
20°-30°	147.0	18.3
30°-40°	164.3	20.4
40°-50°	150.7	18.7
50°-60°	113.2	14.1
60°-70°	64.6	8.0
70°-80°	22.5	2.8
80°-90°	2.9	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°	285.5	35.5
0°-40°	449.8	56.0
0°-60°	713.7	88.8
0°-90°	803.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	803.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	388	388	388	388	388	
5°	391	390	385	381	380	37
15°	378	374	361	351	348	107
25°	346	338	318	303	299	160
35°	302	288	258	241	235	188
45°	235	220	191	172	164	180
55°	159	148	127	106	94	142
65°	91	82	67	47	34	90
75°	38	32	20	6	4	41
85°	5	4	1	0	0	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°	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5
2.5°	391.0	389.7	389.7	389.7	389.7	389.7	389.7	389.7	389.7	389.7	388.5
5°	391.0	391.0	391.0	391.0	391.0	391.0	391.0	389.7	389.7	389.7	389.7
7.5°	389.7	389.7	389.7	389.7	389.7	389.7	389.7	388.5	388.5	387.2	387.2
10°	388.5	388.5	388.5	387.2	387.2	387.2	387.2	387.2	386.0	386.0	384.7
12.5°	384.7	384.7	384.7	384.7	383.5	383.5	383.5	382.3	381.0	381.0	379.8
15°	378.5	379.8	379.8	378.5	378.5	378.5	378.5	377.3	376.1	374.8	373.6
17.5°	373.6	373.6	373.6	372.3	371.1	372.3	371.1	369.9	368.6	367.4	366.1
20°	364.9	364.9	363.6	363.6	363.6	363.6	362.4	361.2	359.9	358.7	357.4
22.5°	356.2	356.2	356.2	353.7	353.7	353.7	352.5	352.5	350.0	348.8	346.3
25°	346.3	346.3	346.3	345.0	343.8	342.5	343.8	341.3	340.1	337.6	337.6
27.5°	336.3	336.3	335.1	335.1	333.9	333.9	332.6	330.1	328.9	327.7	325.2
30°	325.2	325.2	323.9	323.9	322.7	321.4	321.4	319.0	317.7	315.2	312.8
32.5°	314.0	314.0	312.8	312.8	311.5	310.3	310.3	307.8	305.3	302.8	301.6
35°	301.6	301.6	300.3	300.3	299.1	297.9	296.6	294.1	292.9	289.2	287.9
37.5°	286.7	287.9	285.5	285.5	284.2	283.0	281.7	280.5	278.0	275.5	271.8
40°	270.6	269.3	269.3	268.1	266.8	266.8	265.6	263.1	261.9	258.2	255.7
42.5°	251.9	251.9	251.9	250.7	249.5	249.5	247.0	245.7	243.3	240.8	237.1
45°	234.6	234.6	233.3	233.3	230.8	230.8	229.6	227.1	225.9	222.2	219.7
47.5°	216.0	214.7	214.7	213.5	212.2	212.2	211.0	209.7	207.3	203.5	201.1
50°	196.1	196.1	196.1	194.9	193.6	193.6	192.4	189.9	188.6	186.2	182.4
52.5°	177.5	177.5	177.5	176.2	175.0	175.0	173.8	172.5	170.0	167.6	165.1
55°	158.9	158.9	158.9	157.6	157.6	155.1	155.1	153.9	151.4	148.9	147.7
57.5°	140.2	140.2	140.2	140.2	139.0	139.0	137.8	136.5	134.0	132.8	129.1
60°	124.1	122.9	122.9	121.6	121.6	120.4	119.1	117.9	116.7	114.2	112.9
62.5°	105.5	106.7	105.5	105.5	104.3	104.3	104.3	101.8	100.5	98.0	96.8
65°	90.6	90.6	90.6	90.6	88.1	88.1	88.1	85.6	84.4	84.4	81.9
67.5°	75.7	75.7	75.7	74.5	74.5	74.5	73.2	72.0	70.7	69.5	68.3
70°	62.1	62.1	62.1	60.8	60.8	59.6	59.6	58.3	57.1	57.1	54.6
72.5°	49.6	49.6	49.6	49.6	48.4	48.4	47.2	47.2	45.9	44.7	43.4
75°	38.5	38.5	38.5	37.2	37.2	37.2	36.0	36.0	34.8	33.5	32.3
77.5°	28.5	27.3	27.3	27.3	27.3	26.1	26.1	26.1	24.8	23.6	23.6
80°	18.6	18.6	18.6	18.6	18.6	17.4	17.4	17.4	16.1	16.1	14.9
82.5°	11.2	11.2	11.2	11.2	11.2	9.9	9.9	9.9	8.7	8.7	8.7
85°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.7	3.7	3.7
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5
2.5°	389.7	389.7	388.5	388.5	388.5	388.5	388.5	387.2	387.2	387.2	387.2
5°	389.7	388.5	387.2	387.2	387.2	387.2	386.0	386.0	386.0	384.7	384.7
7.5°	386.0	386.0	386.0	384.7	384.7	383.5	383.5	382.3	382.3	381.0	381.0
10°	383.5	382.3	382.3	381.0	381.0	379.8	379.8	377.3	376.1	376.1	374.8
12.5°	378.5	377.3	377.3	374.8	374.8	374.8	373.6	371.1	369.9	369.9	368.6
15°	372.3	371.1	369.9	367.4	367.4	366.1	364.9	363.6	362.4	361.2	359.9
17.5°	364.9	362.4	361.2	359.9	358.7	357.4	356.2	355.0	352.5	352.5	350.0
20°	356.2	353.7	352.5	350.0	348.8	348.8	346.3	343.8	342.5	341.3	338.8
22.5°	345.0	343.8	341.3	338.8	337.6	337.6	335.1	332.6	331.4	328.9	327.7
25°	335.1	331.4	330.1	327.7	326.4	326.4	323.9	321.4	319.0	317.7	315.2
27.5°	322.7	320.2	319.0	315.2	314.0	312.8	310.3	307.8	305.3	302.8	300.3
30°	310.3	307.8	305.3	301.6	301.6	299.1	296.6	292.9	291.7	289.2	285.5
32.5°	297.9	295.4	291.7	289.2	286.7	285.5	281.7	279.3	276.8	273.0	271.8
35°	284.2	280.5	278.0	274.3	273.0	270.6	268.1	264.4	261.9	258.2	254.4
37.5°	269.3	264.4	261.9	258.2	256.9	254.4	251.9	249.5	245.7	242.0	239.5
40°	253.2	248.2	244.5	242.0	239.5	237.1	235.8	230.8	228.4	225.9	223.4
42.5°	234.6	230.8	227.1	224.6	222.2	220.9	217.2	214.7	211.0	208.5	206.0
45°	217.2	213.5	209.7	206.0	204.8	203.5	201.1	197.3	193.6	191.1	188.6
47.5°	198.6	196.1	191.1	189.9	187.4	186.2	182.4	180.0	178.7	175.0	172.5
50°	180.0	177.5	175.0	171.3	170.0	168.8	166.3	163.8	161.3	158.9	156.4
52.5°	161.3	160.1	157.6	153.9	153.9	152.7	150.2	147.7	145.2	142.7	140.2
55°	145.2	142.7	140.2	137.8	136.5	135.3	132.8	131.6	129.1	126.6	124.1
57.5°	127.8	125.4	124.1	121.6	120.4	119.1	116.7	115.4	112.9	110.5	108.0
60°	111.7	109.2	108.0	105.5	104.3	104.3	101.8	99.3	98.0	95.6	93.1
62.5°	95.6	93.1	91.8	89.4	89.4	88.1	86.9	84.4	83.2	80.7	79.4
65°	80.7	79.4	76.9	75.7	74.5	73.2	72.0	70.7	68.3	67.0	64.5
67.5°	67.0	64.5	63.3	62.1	60.8	59.6	58.3	57.1	54.6	53.4	50.9
70°	53.4	52.1	50.9	49.6	48.4	48.4	45.9	44.7	42.2	41.0	38.5
72.5°	42.2	41.0	39.7	37.2	37.2	36.0	34.8	33.5	31.0	29.8	27.3
75°	31.0	31.0	28.5	27.3	27.3	26.1	24.8	23.6	22.3	19.9	18.6
77.5°	22.3	21.1	19.9	18.6	17.4	17.4	16.1	14.9	13.7	12.4	9.9
80°	14.9	13.7	12.4	11.2	11.2	9.9	8.7	8.7	7.4	6.2	5.0
82.5°	7.4	7.4	6.2	6.2	5.0	5.0	5.0	3.7	3.7	2.5	2.5
85°	3.7	2.5	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	0.0
87.5°	1.2	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°	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5
2.5°	387.2	386.0	387.2	387.2	386.0	386.0	386.0	386.0	384.7	386.0	384.7
5°	384.7	383.5	383.5	383.5	383.5	382.3	382.3	381.0	381.0	381.0	381.0
7.5°	379.8	378.5	378.5	377.3	377.3	377.3	377.3	376.1	376.1	374.8	374.8
10°	374.8	373.6	372.3	372.3	371.1	371.1	371.1	369.9	368.6	368.6	367.4
12.5°	366.1	366.1	364.9	364.9	363.6	363.6	362.4	361.2	361.2	359.9	359.9
15°	358.7	357.4	356.2	356.2	355.0	353.7	352.5	352.5	351.2	351.2	350.0
17.5°	348.8	346.3	346.3	345.0	343.8	343.8	342.5	341.3	340.1	340.1	340.1
20°	337.6	336.3	335.1	333.9	332.6	332.6	331.4	330.1	328.9	327.7	327.7
22.5°	325.2	323.9	322.7	321.4	321.4	320.2	319.0	317.7	316.5	315.2	315.2
25°	312.8	311.5	310.3	309.0	307.8	306.6	305.3	304.1	302.8	301.6	301.6
27.5°	299.1	296.6	295.4	294.1	292.9	291.7	291.7	289.2	289.2	287.9	286.7
30°	284.2	281.7	279.3	279.3	278.0	276.8	274.3	274.3	273.0	271.8	270.6
32.5°	268.1	266.8	264.4	264.4	261.9	260.6	259.4	258.2	256.9	255.7	255.7
35°	253.2	249.5	248.2	248.2	245.7	244.5	243.3	240.8	240.8	238.3	238.3
37.5°	237.1	234.6	233.3	230.8	229.6	228.4	227.1	224.6	223.4	222.2	220.9
40°	220.9	218.4	216.0	214.7	213.5	211.0	209.7	207.3	207.3	204.8	203.5
42.5°	203.5	201.1	198.6	197.3	196.1	193.6	192.4	189.9	188.6	187.4	186.2
45°	186.2	183.7	182.4	181.2	180.0	178.7	175.0	173.8	172.5	170.0	168.8
47.5°	170.0	167.6	165.1	165.1	162.6	161.3	158.9	156.4	155.1	152.7	151.4
50°	153.9	151.4	148.9	147.7	147.7	144.0	142.7	140.2	137.8	135.3	134.0
52.5°	137.8	135.3	132.8	131.6	130.3	127.8	125.4	124.1	121.6	119.1	117.9
55°	121.6	119.1	116.7	115.4	114.2	111.7	110.5	106.7	105.5	103.0	100.5
57.5°	106.7	104.3	101.8	100.5	99.3	96.8	94.3	91.8	90.6	88.1	85.6
60°	90.6	89.4	86.9	85.6	84.4	83.2	79.4	76.9	74.5	73.2	70.7
62.5°	76.9	74.5	72.0	70.7	69.5	68.3	65.8	63.3	62.1	58.3	55.9
65°	63.3	60.8	58.3	57.1	55.9	54.6	52.1	49.6	47.2	44.7	43.4
67.5°	48.4	47.2	44.7	44.7	43.4	41.0	38.5	37.2	34.8	33.5	31.0
70°	37.2	36.0	33.5	32.3	31.0	28.5	27.3	24.8	23.6	22.3	19.9
72.5°	26.1	24.8	22.3	21.1	19.9	18.6	16.1	14.9	13.7	12.4	11.2
75°	17.4	14.9	13.7	12.4	12.4	9.9	8.7	7.4	6.2	5.0	5.0
77.5°	9.9	8.7	6.2	6.2	6.2	5.0	3.7	3.7	2.5	2.5	2.5
80°	5.0	3.7	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
85°	0.0	0.0	0.0	0.0	0.0	1.2	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: P642325

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 900LM - 5000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	388.5	388.5	388.5	388.5	388.5	388.5	388.5	388.5
2.5°	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7
5°	381.0	379.8	379.8	379.8	379.8	379.8	379.8	379.8
7.5°	374.8	374.8	373.6	374.8	373.6	373.6	373.6	373.6
10°	367.4	367.4	367.4	367.4	366.1	366.1	366.1	366.1
12.5°	359.9	358.7	358.7	358.7	357.4	358.7	357.4	357.4
15°	350.0	348.8	348.8	348.8	348.8	347.5	348.8	347.5
17.5°	338.8	338.8	337.6	338.8	337.6	337.6	337.6	337.6
20°	326.4	326.4	326.4	325.2	326.4	325.2	325.2	325.2
22.5°	314.0	314.0	312.8	312.8	312.8	312.8	312.8	312.8
25°	300.3	300.3	300.3	300.3	299.1	299.1	299.1	299.1
27.5°	286.7	285.5	285.5	285.5	284.2	285.5	284.2	284.2
30°	270.6	270.6	269.3	269.3	269.3	268.1	268.1	269.3
32.5°	253.2	253.2	253.2	253.2	251.9	251.9	251.9	251.9
35°	237.1	237.1	235.8	235.8	235.8	234.6	234.6	234.6
37.5°	219.7	219.7	218.4	218.4	218.4	217.2	217.2	218.4
40°	202.3	202.3	201.1	201.1	201.1	199.8	199.8	199.8
42.5°	184.9	183.7	183.7	182.4	182.4	182.4	181.2	181.2
45°	167.6	166.3	166.3	166.3	165.1	163.8	163.8	163.8
47.5°	150.2	148.9	147.7	147.7	146.5	146.5	146.5	147.7
50°	132.8	131.6	131.6	130.3	129.1	129.1	129.1	127.8
52.5°	115.4	114.2	114.2	112.9	112.9	111.7	110.5	110.5
55°	99.3	98.0	96.8	95.6	95.6	94.3	94.3	94.3
57.5°	83.2	81.9	80.7	80.7	79.4	79.4	78.2	76.9
60°	68.3	67.0	65.8	65.8	64.5	63.3	62.1	62.1
62.5°	54.6	53.4	52.1	50.9	49.6	48.4	47.2	48.4
65°	42.2	39.7	38.5	37.2	37.2	36.0	34.8	33.5
67.5°	29.8	28.5	27.3	26.1	24.8	23.6	22.3	22.3
70°	18.6	16.1	16.1	16.1	14.9	13.7	12.4	12.4
72.5°	9.9	8.7	7.4	7.4	6.2	6.2	6.2	6.2
75°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
77.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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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Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270°

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(END OF REPORT)