

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: P642336

Luminaire Tested: ML5612LSWW97FS1E - 692SC WW - 900LM - 2700K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642336
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-131)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 692SC WW - 900LM - 2700K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 723.5 lumens
Efficiency: N/A
Efficacy: 54.4 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.09 / 1.17
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

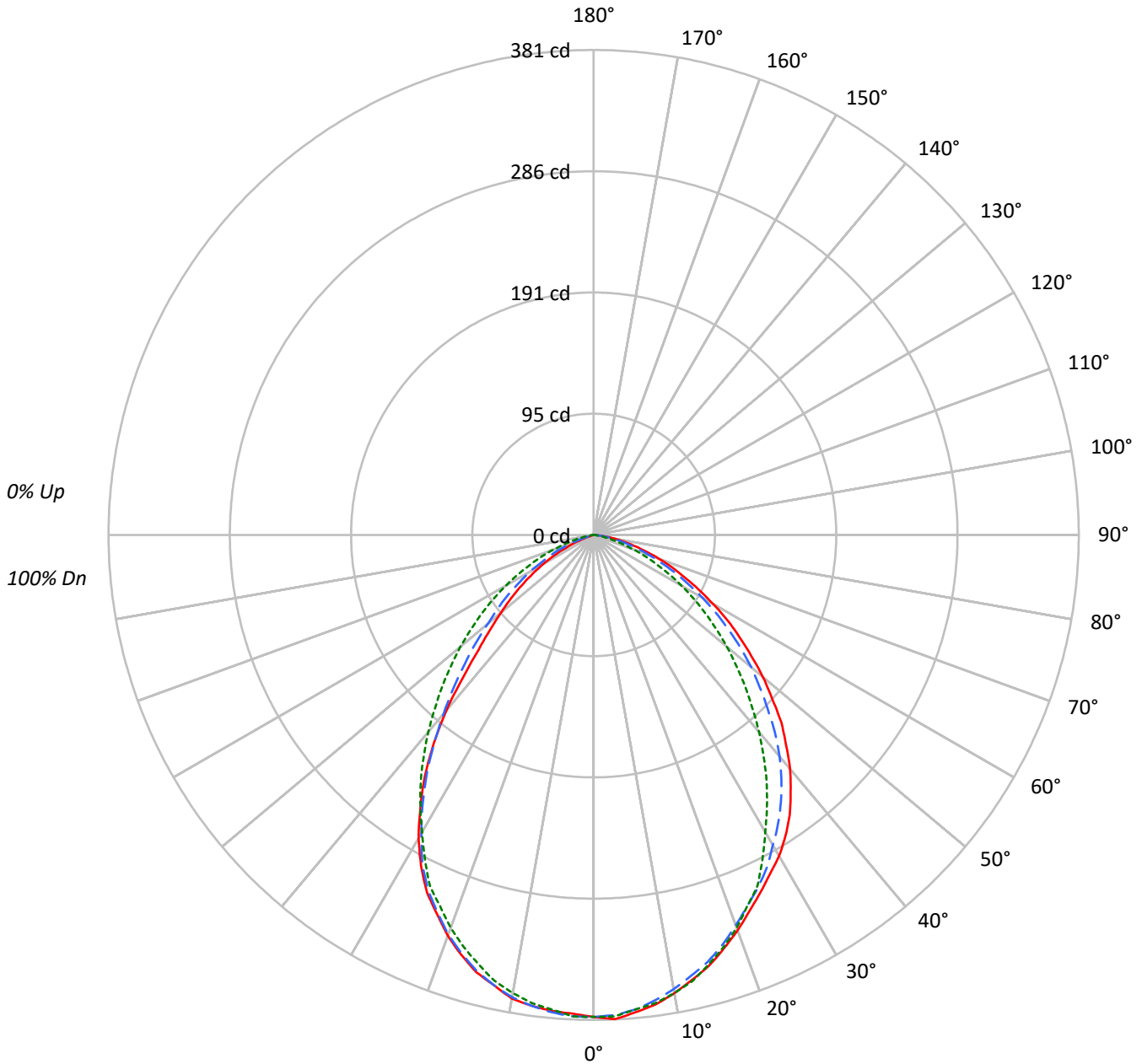
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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								
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88								
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77								
3	95	86	79	73	92	84	78	72	81	76	71	79	74	70	76	72	69	67								
4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61	59								
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52								
6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	46								
7	70	58	50	45	69	57	50	44	56	49	44	55	48	44	53	48	44	42								
8	66	53	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38								
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34								
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	20755	20755	20755	20755	20755
5°	20719	20598	20598	20719	20658
10°	20346	20168	20346	20530	20591
15°	19881	19694	19819	20125	20187
20°	19287	19036	19158	19479	19543
25°	18745	18479	18412	18612	18745
30°	18440	17819	17060	17129	17408
35°	17962	17159	15847	15265	15479
40°	17182	16245	14448	13117	12881
45°	16157	14971	13025	11079	9900
50°	14797	13774	11633	9211	8094
55°	13352	12310	10217	7818	6566
60°	11841	10767	8738	6337	5022
65°	10196	9197	7082	4670	3113
70°	8751	7517	5241	2629	1218
75°	6926	5782	3474	699	0
80°	5177	4136	1736	0	0
85°	2768	2076	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 16157 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.5	4.9
10°-20°	98.5	13.6
20°-30°	140.4	19.4
30°-40°	151.0	20.9
40°-50°	130.1	18.0
50°-60°	94.3	13.0
60°-70°	53.2	7.4
70°-80°	18.1	2.5
80°-90°	2.3	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°	274.4	37.9
0°-40°	425.4	58.8
0°-60°	649.9	89.8
0°-90°	723.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	723.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	379	379	379	379	379	
5°	376	374	374	376	375	36
15°	350	347	349	355	356	98
25°	310	306	304	308	310	143
35°	268	256	237	228	231	167
45°	208	193	168	143	128	160
55°	140	129	107	82	69	125
65°	79	71	55	36	24	79
75°	33	27	16	3	0	36
85°	4	3	0	0	0	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°	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6
2.5°	380.8	377.6	376.5	377.6	377.6	377.6	377.6	377.6	377.6	376.5	377.6
5°	376.5	373.2	373.2	373.2	373.2	373.2	372.1	373.2	373.2	373.2	374.3
7.5°	372.1	367.7	368.8	367.7	368.8	367.7	367.7	368.8	367.7	368.8	368.8
10°	365.5	362.3	362.3	362.3	362.3	362.3	362.3	362.3	362.3	362.3	362.3
12.5°	357.9	354.6	354.6	354.6	354.6	354.6	354.6	354.6	355.7	354.6	354.6
15°	350.3	345.9	347.0	345.9	345.9	345.9	345.9	345.9	345.9	345.9	347.0
17.5°	340.5	337.2	337.2	337.2	337.2	337.2	337.2	336.1	337.2	337.2	337.2
20°	330.6	327.4	327.4	326.3	327.4	326.3	326.3	326.3	327.4	326.3	326.3
22.5°	319.7	316.4	317.5	316.4	316.4	316.4	316.4	316.4	315.4	316.4	315.4
25°	309.9	308.8	307.7	308.8	307.7	307.7	307.7	306.6	306.6	306.6	305.5
27.5°	300.1	297.9	297.9	297.9	297.9	296.8	296.8	296.8	295.7	294.6	294.6
30°	291.3	288.1	288.1	288.1	287.0	287.0	285.9	285.9	283.7	282.6	281.5
32.5°	280.4	278.3	277.2	277.2	276.1	276.1	275.0	275.0	272.8	271.7	269.5
35°	268.4	267.3	267.3	266.3	265.2	264.1	263.0	261.9	260.8	258.6	256.4
37.5°	254.2	253.2	252.1	252.1	251.0	249.9	249.9	247.7	246.6	244.4	242.2
40°	240.1	237.9	237.9	236.8	235.7	234.6	234.6	232.4	231.3	229.2	227.0
42.5°	223.7	221.5	221.5	220.4	220.4	220.4	219.3	217.1	215.0	212.8	210.6
45°	208.4	206.2	206.2	204.1	204.1	203.0	201.9	200.8	198.6	196.4	193.1
47.5°	189.9	188.8	188.8	187.7	186.6	185.5	185.5	184.4	182.2	179.0	176.8
50°	173.5	172.4	172.4	171.3	170.2	169.1	168.0	167.0	165.9	163.7	161.5
52.5°	156.0	156.0	154.9	153.9	153.9	152.8	151.7	150.6	148.4	146.2	145.1
55°	139.7	138.6	138.6	137.5	137.5	136.4	135.3	134.2	133.1	130.9	128.8
57.5°	124.4	122.2	122.2	121.1	121.1	121.1	120.0	117.8	116.8	114.6	113.5
60°	108.0	106.9	106.9	106.9	105.8	104.8	104.8	102.6	101.5	100.4	98.2
62.5°	92.8	91.7	91.7	91.7	90.6	90.6	89.5	88.4	87.3	86.2	84.0
65°	78.6	78.6	78.6	77.5	77.5	76.4	75.3	75.3	74.2	73.1	70.9
67.5°	66.6	65.5	65.5	65.5	64.4	64.4	63.3	62.2	61.1	60.0	57.8
70°	54.6	53.5	53.5	52.4	52.4	52.4	52.4	51.3	49.1	49.1	46.9
72.5°	42.6	42.6	42.6	41.5	41.5	41.5	40.4	40.4	39.3	38.2	37.1
75°	32.7	32.7	32.7	31.6	31.6	31.6	30.6	30.6	29.5	28.4	27.3
77.5°	24.0	24.0	24.0	22.9	22.9	22.9	21.8	21.8	20.7	20.7	19.6
80°	16.4	16.4	16.4	15.3	15.3	15.3	15.3	14.2	14.2	13.1	13.1
82.5°	9.8	9.8	9.8	9.8	8.7	8.7	8.7	8.7	8.7	7.6	7.6
85°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.3	3.3
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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°	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6
2.5°	377.6	377.6	377.6	377.6	377.6	377.6	377.6	377.6	377.6	378.6	377.6
5°	374.3	374.3	374.3	374.3	374.3	374.3	375.4	374.3	375.4	374.3	375.4
7.5°	368.8	368.8	369.9	369.9	368.8	369.9	369.9	369.9	369.9	371.0	371.0
10°	362.3	363.4	363.4	364.5	364.5	364.5	364.5	365.5	365.5	365.5	365.5
12.5°	355.7	355.7	355.7	355.7	356.8	355.7	356.8	356.8	357.9	359.0	357.9
15°	345.9	347.0	347.0	347.0	347.0	347.0	348.1	349.2	349.2	349.2	350.3
17.5°	337.2	337.2	337.2	338.3	337.2	338.3	338.3	338.3	339.4	339.4	340.5
20°	326.3	325.2	327.4	326.3	326.3	327.4	327.4	327.4	328.4	328.4	328.4
22.5°	314.3	315.4	314.3	314.3	315.4	315.4	315.4	314.3	315.4	315.4	316.4
25°	304.4	304.4	304.4	304.4	304.4	304.4	304.4	303.4	304.4	304.4	304.4
27.5°	293.5	291.3	291.3	290.3	290.3	289.2	288.1	288.1	288.1	287.0	288.1
30°	280.4	278.3	277.2	276.1	275.0	275.0	272.8	271.7	270.6	269.5	268.4
32.5°	267.3	265.2	264.1	263.0	260.8	259.7	257.5	256.4	255.3	253.2	251.0
35°	255.3	252.1	249.9	247.7	246.6	245.5	243.3	241.2	239.0	236.8	234.6
37.5°	239.0	236.8	234.6	232.4	231.3	230.2	228.1	223.7	221.5	219.3	217.1
40°	224.8	221.5	219.3	216.1	215.0	212.8	210.6	207.3	204.1	201.9	199.7
42.5°	207.3	205.1	203.0	199.7	198.6	196.4	193.1	191.0	188.8	184.4	182.2
45°	191.0	188.8	186.6	183.3	181.1	180.0	177.9	174.6	171.3	168.0	165.9
47.5°	174.6	172.4	169.1	167.0	164.8	163.7	161.5	158.2	154.9	151.7	149.5
50°	158.2	156.0	153.9	149.5	149.5	147.3	145.1	141.9	139.7	136.4	133.1
52.5°	142.9	139.7	137.5	134.2	134.2	133.1	129.9	126.6	124.4	121.1	118.9
55°	126.6	124.4	122.2	120.0	117.8	116.8	115.7	112.4	109.1	106.9	103.7
57.5°	111.3	108.0	106.9	104.8	103.7	102.6	100.4	97.1	94.9	92.8	90.6
60°	97.1	94.9	91.7	90.6	89.5	88.4	86.2	84.0	81.8	79.7	77.5
62.5°	82.9	80.7	78.6	76.4	75.3	74.2	73.1	70.9	68.7	66.6	64.4
65°	68.7	67.7	65.5	64.4	63.3	62.2	60.0	57.8	56.7	54.6	52.4
67.5°	56.7	55.7	53.5	52.4	51.3	51.3	48.0	46.9	44.7	43.6	41.5
70°	45.8	44.7	42.6	41.5	40.4	39.3	38.2	37.1	34.9	32.7	31.6
72.5°	36.0	33.8	32.7	31.6	30.6	30.6	28.4	27.3	25.1	24.0	21.8
75°	26.2	25.1	24.0	22.9	22.9	21.8	20.7	19.6	17.5	16.4	15.3
77.5°	18.6	17.5	16.4	15.3	15.3	14.2	13.1	12.0	10.9	9.8	8.7
80°	12.0	10.9	10.9	9.8	8.7	8.7	7.6	6.5	5.5	5.5	4.4
82.5°	6.5	6.5	5.5	5.5	4.4	4.4	3.3	3.3	2.2	2.2	1.1
85°	3.3	2.2	2.2	2.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
87.5°	1.1	1.1	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°	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6
2.5°	377.6	377.6	377.6	377.6	377.6	377.6	377.6	377.6	378.6	377.6	377.6
5°	375.4	375.4	376.5	375.4	376.5	376.5	375.4	375.4	376.5	377.6	376.5
7.5°	371.0	371.0	372.1	372.1	372.1	372.1	372.1	373.2	373.2	374.3	374.3
10°	366.6	366.6	366.6	366.6	367.7	367.7	368.8	368.8	368.8	368.8	368.8
12.5°	359.0	360.1	360.1	360.1	360.1	361.2	361.2	362.3	362.3	362.3	363.4
15°	350.3	351.4	352.5	352.5	351.4	352.5	353.5	353.5	354.6	354.6	354.6
17.5°	340.5	341.5	341.5	342.6	341.5	343.7	343.7	344.8	344.8	345.9	345.9
20°	329.5	330.6	330.6	330.6	331.7	331.7	332.8	332.8	333.9	333.9	333.9
22.5°	316.4	317.5	317.5	317.5	317.5	318.6	318.6	319.7	320.8	321.9	320.8
25°	304.4	305.5	306.6	305.5	306.6	306.6	306.6	307.7	307.7	308.8	307.7
27.5°	288.1	288.1	288.1	289.2	290.3	290.3	290.3	291.3	291.3	291.3	292.4
30°	268.4	267.3	268.4	268.4	268.4	268.4	270.6	270.6	270.6	271.7	272.8
32.5°	249.9	249.9	249.9	248.8	248.8	248.8	248.8	249.9	249.9	251.0	252.1
35°	232.4	231.3	229.2	229.2	229.2	228.1	227.0	227.0	228.1	228.1	228.1
37.5°	213.9	212.8	211.7	209.5	209.5	207.3	206.2	205.1	205.1	204.1	204.1
40°	196.4	194.2	192.1	192.1	189.9	188.8	186.6	185.5	183.3	181.1	181.1
42.5°	179.0	176.8	174.6	173.5	171.3	170.2	167.0	164.8	162.6	161.5	159.3
45°	162.6	160.4	157.1	156.0	153.9	151.7	149.5	146.2	142.9	140.8	139.7
47.5°	146.2	144.0	140.8	138.6	137.5	134.2	132.0	128.8	125.5	122.2	118.9
50°	130.9	127.7	124.4	122.2	121.1	117.8	115.7	112.4	108.0	106.9	103.7
52.5°	115.7	112.4	109.1	108.0	106.9	103.7	100.4	97.1	94.9	91.7	89.5
55°	100.4	98.2	94.9	93.8	92.8	89.5	86.2	84.0	81.8	78.6	76.4
57.5°	87.3	85.1	81.8	80.7	79.7	76.4	74.2	70.9	68.7	66.6	64.4
60°	75.3	72.0	69.8	68.7	67.7	64.4	62.2	60.0	57.8	55.7	52.4
62.5°	62.2	60.0	57.8	56.7	54.6	53.5	50.2	49.1	45.8	44.7	42.6
65°	50.2	48.0	45.8	45.8	44.7	41.5	40.4	38.2	36.0	33.8	32.7
67.5°	40.4	38.2	36.0	34.9	33.8	31.6	30.6	28.4	26.2	25.1	22.9
70°	30.6	28.4	26.2	25.1	24.0	22.9	20.7	18.6	16.4	15.3	13.1
72.5°	20.7	18.6	17.5	17.5	16.4	14.2	12.0	10.9	8.7	7.6	6.5
75°	13.1	10.9	9.8	8.7	8.7	7.6	5.5	4.4	3.3	2.2	1.1
77.5°	7.6	6.5	5.5	4.4	4.4	3.3	2.2	1.1	1.1	0.0	0.0
80°	3.3	2.2	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	1.1	1.1	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: P642336

CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 900LM - 2700K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	378.6	378.6	378.6	378.6	378.6	378.6	378.6	378.6
2.5°	377.6	377.6	377.6	377.6	376.5	376.5	376.5	376.5
5°	376.5	376.5	376.5	376.5	375.4	375.4	376.5	375.4
7.5°	374.3	374.3	373.2	373.2	373.2	373.2	373.2	373.2
10°	369.9	369.9	369.9	368.8	369.9	369.9	368.8	369.9
12.5°	363.4	363.4	363.4	363.4	362.3	362.3	363.4	362.3
15°	355.7	355.7	355.7	355.7	355.7	354.6	355.7	355.7
17.5°	347.0	347.0	345.9	345.9	345.9	347.0	347.0	345.9
20°	335.0	335.0	335.0	335.0	335.0	335.0	335.0	335.0
22.5°	321.9	321.9	321.9	321.9	321.9	321.9	321.9	321.9
25°	308.8	308.8	308.8	308.8	308.8	308.8	308.8	309.9
27.5°	292.4	292.4	292.4	292.4	292.4	291.3	291.3	293.5
30°	272.8	273.9	273.9	273.9	273.9	273.9	273.9	275.0
32.5°	253.2	253.2	253.2	254.2	253.2	254.2	253.2	253.2
35°	230.2	230.2	230.2	230.2	230.2	231.3	231.3	231.3
37.5°	204.1	205.1	205.1	206.2	206.2	206.2	207.3	206.2
40°	180.0	180.0	180.0	179.0	180.0	179.0	180.0	180.0
42.5°	157.1	154.9	154.9	153.9	153.9	152.8	151.7	151.7
45°	136.4	133.1	133.1	132.0	130.9	128.8	127.7	127.7
47.5°	116.8	115.7	114.6	113.5	112.4	110.2	109.1	110.2
50°	100.4	99.3	98.2	98.2	97.1	96.0	94.9	94.9
52.5°	87.3	85.1	84.0	84.0	82.9	81.8	81.8	81.8
55°	74.2	72.0	72.0	72.0	70.9	69.8	69.8	68.7
57.5°	62.2	60.0	60.0	58.9	57.8	57.8	57.8	56.7
60°	51.3	49.1	48.0	48.0	46.9	45.8	45.8	45.8
62.5°	40.4	39.3	37.1	37.1	36.0	34.9	33.8	34.9
65°	30.6	28.4	27.3	27.3	26.2	25.1	24.0	24.0
67.5°	20.7	19.6	18.6	18.6	16.4	16.4	15.3	15.3
70°	12.0	10.9	10.9	9.8	8.7	8.7	7.6	7.6
72.5°	5.5	4.4	4.4	3.3	3.3	2.2	2.2	2.2
75°	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	1.1	1.1	0.0	0.0
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

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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)