

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: P642289

Luminaire Tested: ML5612LSWW97FS1E - 592SC WW - 600LM - 4000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642289
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 - 600LM - 4000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 626.7 lumens
Efficiency: N/A
Efficacy: 60.8 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

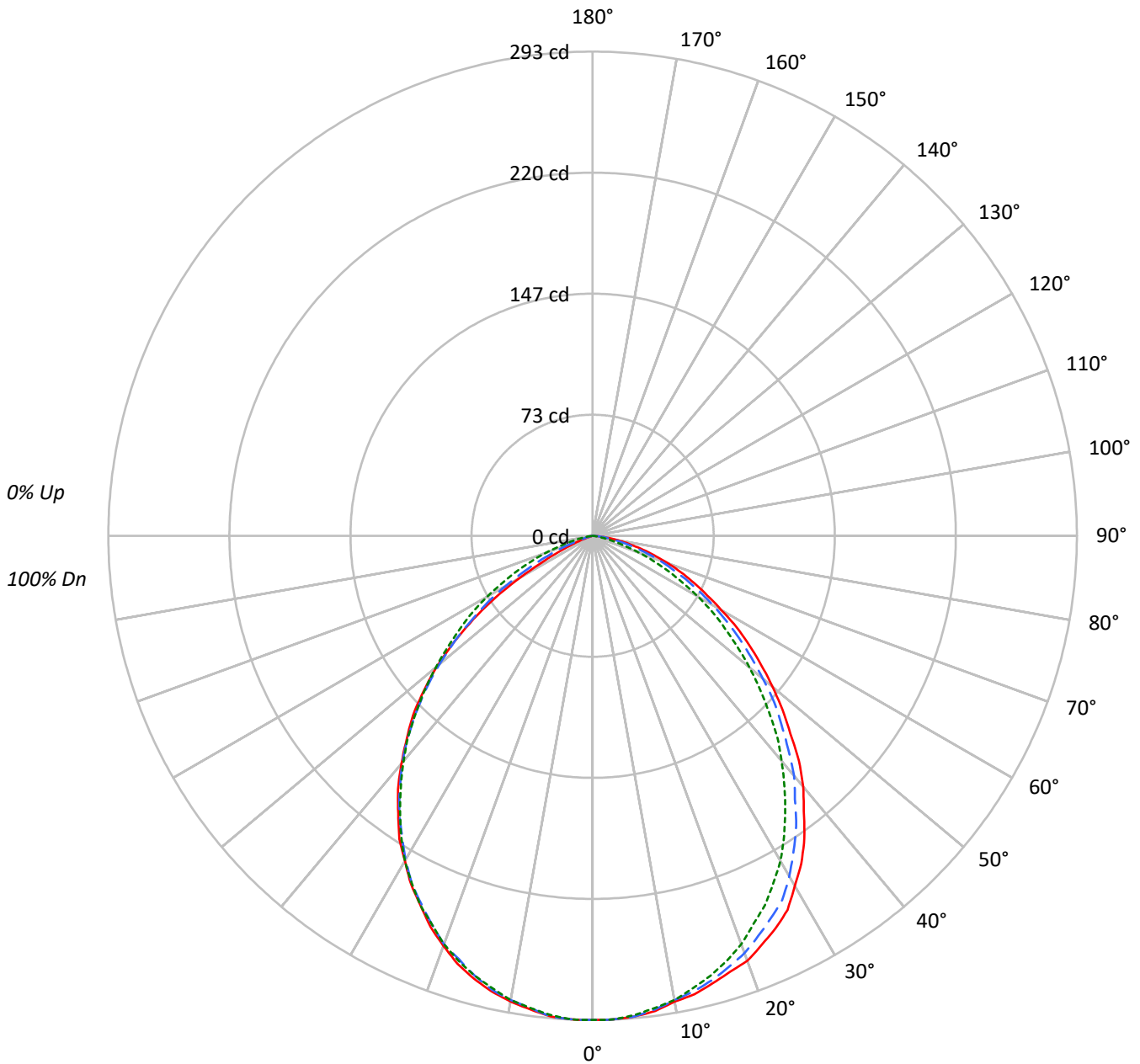
Input Watts (W): 10.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	23130	23130	23130	23130	23130
5°	23139	23139	23067	23139	23139
10°	22941	22869	22869	22869	22941
15°	22916	22761	22524	22524	22679
20°	22993	22581	22094	22094	22178
25°	22821	22237	21479	21392	21479
30°	22296	21685	20710	20628	20710
35°	21529	20690	19573	19659	19756
40°	20425	19528	18333	18436	18539
45°	18889	18030	16835	16835	17159
50°	17451	16506	15204	14848	15081
55°	15965	14905	13446	12373	12111
60°	14194	13278	11604	9615	7941
65°	12646	11562	9396	6314	3792
70°	11148	9809	6924	3116	1108
75°	9150	7656	4118	885	305
80°	7046	5273	1773	0	0
85°	3532	2627	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 19001 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.6	4.4
10°-20°	78.1	12.5
20°-30°	115.2	18.4
30°-40°	130.4	20.8
40°-50°	120.5	19.2
50°-60°	89.0	14.2
60°-70°	47.8	7.6
70°-80°	16.0	2.6
80°-90°	2.0	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°	221.0	35.3
0°-40°	351.4	56.1
0°-60°	560.9	89.5
0°-90°	626.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	626.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	293	293	293	293	293	
5°	292	292	291	292	292	28
15°	280	278	276	276	278	79
25°	262	255	247	246	247	120
35°	223	215	203	204	205	139
45°	169	162	151	151	154	131
55°	116	108	98	90	88	104
65°	68	62	50	34	20	68
75°	30	25	14	3	1	32
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°	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0
2.5°	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0
5°	292.0	292.0	291.1	292.0	292.0	292.0	292.0	291.1	292.0	292.0	292.0
7.5°	290.1	289.1	289.1	289.1	289.1	289.1	289.1	289.1	289.1	289.1	289.1
10°	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	285.3
12.5°	284.3	283.3	283.3	283.3	283.3	283.3	283.3	282.4	283.3	282.4	282.4
15°	280.4	280.4	280.4	280.4	280.4	280.4	279.5	279.5	279.5	279.5	278.5
17.5°	276.6	276.6	277.5	277.5	276.6	276.6	276.6	275.6	274.6	274.6	273.7
20°	273.7	273.7	272.7	272.7	271.7	272.7	271.7	270.7	270.7	269.8	268.8
22.5°	267.8	267.8	267.8	267.8	267.8	266.9	266.9	265.9	264.9	264.0	262.0
25°	262.0	262.0	262.0	262.0	261.1	261.1	261.1	259.1	258.2	257.2	255.3
27.5°	255.3	254.3	254.3	254.3	253.3	253.3	252.4	251.4	250.4	249.5	248.5
30°	244.6	244.6	244.6	244.6	243.7	242.7	242.7	241.7	240.8	238.8	237.9
32.5°	235.0	235.0	234.0	233.0	233.0	233.0	232.1	231.1	229.2	228.2	226.3
35°	223.4	222.4	222.4	221.4	221.4	221.4	220.5	218.5	217.6	216.6	214.7
37.5°	209.8	210.8	209.8	209.8	208.9	207.9	206.9	206.0	205.0	203.1	201.1
40°	198.2	198.2	197.3	196.3	195.3	195.3	194.4	193.4	192.4	191.5	189.5
42.5°	184.7	184.7	183.7	183.7	182.8	182.8	180.8	179.9	178.9	177.9	175.0
45°	169.2	169.2	170.2	169.2	168.3	167.3	167.3	166.3	164.4	163.4	161.5
47.5°	155.7	156.6	155.7	154.7	154.7	153.7	153.7	151.8	151.8	149.9	148.9
50°	142.1	142.1	142.1	142.1	141.2	140.2	140.2	139.2	137.3	136.3	134.4
52.5°	128.6	128.6	128.6	128.6	127.6	127.6	126.7	125.7	124.7	122.8	120.9
55°	116.0	115.1	115.1	115.1	114.1	114.1	113.1	112.2	111.2	110.2	108.3
57.5°	103.5	102.5	102.5	101.5	101.5	100.6	100.6	99.6	98.6	96.7	95.7
60°	89.9	90.9	89.9	89.9	89.0	89.0	89.0	88.0	86.1	85.1	84.1
62.5°	78.3	79.3	78.3	77.4	77.4	77.4	77.4	75.4	74.5	73.5	72.5
65°	67.7	67.7	67.7	66.7	66.7	66.7	64.8	64.8	63.8	62.9	61.9
67.5°	58.0	57.1	57.1	57.1	56.1	56.1	55.1	55.1	53.2	53.2	51.2
70°	48.3	47.4	47.4	47.4	46.4	45.4	46.4	44.5	43.5	42.5	42.5
72.5°	38.7	38.7	37.7	37.7	37.7	36.7	36.7	35.8	34.8	33.8	32.9
75°	30.0	30.0	30.0	29.0	29.0	28.0	28.0	27.1	27.1	25.1	25.1
77.5°	22.2	22.2	22.2	21.3	21.3	21.3	20.3	20.3	19.3	18.4	17.4
80°	15.5	14.5	14.5	14.5	14.5	13.5	13.5	13.5	12.6	12.6	11.6
82.5°	8.7	8.7	8.7	8.7	8.7	8.7	7.7	7.7	7.7	6.8	6.8
85°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	2.9	2.9	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0
2.5°	293.0	293.0	293.0	293.0	292.0	293.0	292.0	293.0	293.0	293.0	293.0
5°	292.0	291.1	291.1	291.1	292.0	292.0	291.1	291.1	291.1	291.1	291.1
7.5°	289.1	289.1	289.1	288.2	289.1	289.1	288.2	289.1	289.1	288.2	289.1
10°	286.2	286.2	285.3	285.3	285.3	285.3	285.3	285.3	284.3	285.3	285.3
12.5°	282.4	282.4	282.4	281.4	281.4	281.4	281.4	281.4	280.4	280.4	281.4
15°	278.5	278.5	277.5	277.5	277.5	276.6	276.6	276.6	276.6	275.6	275.6
17.5°	273.7	272.7	272.7	271.7	271.7	270.7	270.7	269.8	269.8	269.8	268.8
20°	267.8	266.9	265.9	265.9	264.9	264.9	264.0	264.0	263.0	263.0	262.0
22.5°	261.1	260.1	259.1	258.2	258.2	257.2	257.2	256.2	255.3	254.3	254.3
25°	255.3	253.3	252.4	251.4	249.5	249.5	248.5	248.5	247.5	246.6	245.6
27.5°	246.6	244.6	243.7	242.7	241.7	240.8	238.8	238.8	237.9	236.9	235.9
30°	235.9	235.0	233.0	232.1	231.1	231.1	229.2	227.2	227.2	227.2	226.3
32.5°	225.3	223.4	222.4	220.5	219.5	219.5	218.5	216.6	215.6	215.6	214.7
35°	213.7	211.8	209.8	208.9	207.9	206.9	206.0	205.0	204.0	203.1	202.1
37.5°	200.2	198.2	197.3	196.3	195.3	194.4	193.4	192.4	191.5	190.5	191.5
40°	187.6	185.7	183.7	182.8	181.8	181.8	180.8	179.9	178.9	177.9	177.9
42.5°	174.1	172.1	171.2	170.2	169.2	168.3	167.3	166.3	165.4	165.4	164.4
45°	159.5	158.6	156.6	155.7	154.7	154.7	152.8	151.8	151.8	150.8	150.8
47.5°	147.0	145.0	143.1	142.1	141.2	140.2	139.2	138.3	137.3	137.3	137.3
50°	132.5	131.5	129.6	128.6	127.6	127.6	126.7	125.7	124.7	123.8	123.8
52.5°	118.9	118.0	118.0	116.0	115.1	115.1	113.1	113.1	111.2	110.2	109.3
55°	107.3	105.4	104.4	102.5	102.5	101.5	100.6	99.6	98.6	97.7	96.7
57.5°	93.8	92.8	91.9	90.9	90.9	89.9	89.0	88.0	86.1	86.1	84.1
60°	83.2	81.2	80.3	79.3	78.3	78.3	77.4	76.4	74.5	73.5	72.5
62.5°	71.6	69.6	69.6	68.7	66.7	66.7	65.8	63.8	62.9	60.9	60.0
65°	60.9	60.0	58.0	57.1	57.1	56.1	54.1	53.2	52.2	50.3	48.3
67.5°	50.3	49.3	48.3	46.4	46.4	45.4	43.5	42.5	40.6	39.6	37.7
70°	40.6	39.6	38.7	36.7	36.7	35.8	34.8	32.9	30.9	30.0	28.0
72.5°	31.9	30.9	30.0	28.0	28.0	27.1	25.1	24.2	22.2	20.3	19.3
75°	24.2	23.2	21.3	20.3	19.3	19.3	17.4	16.4	15.5	13.5	12.6
77.5°	16.4	15.5	14.5	13.5	13.5	12.6	11.6	10.6	9.7	8.7	6.8
80°	10.6	9.7	8.7	8.7	7.7	7.7	6.8	5.8	4.8	3.9	2.9
82.5°	5.8	5.8	4.8	3.9	3.9	3.9	2.9	2.9	1.9	1.0	1.0
85°	1.9	1.9	1.9	1.9	1.0	1.0	1.0	1.0	1.0	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0
2.5°	293.0	293.0	293.0	293.0	293.0	293.0	292.0	293.0	293.0	293.0	292.0
5°	292.0	291.1	291.1	292.0	291.1	291.1	292.0	292.0	292.0	291.1	291.1
7.5°	288.2	289.1	288.2	288.2	289.1	289.1	289.1	289.1	288.2	288.2	289.1
10°	285.3	285.3	284.3	285.3	284.3	285.3	285.3	285.3	285.3	285.3	285.3
12.5°	280.4	280.4	280.4	281.4	280.4	280.4	281.4	281.4	281.4	281.4	281.4
15°	274.6	274.6	275.6	274.6	275.6	275.6	275.6	275.6	275.6	275.6	276.6
17.5°	268.8	268.8	268.8	268.8	268.8	268.8	268.8	268.8	268.8	269.8	269.8
20°	262.0	262.0	262.0	262.0	262.0	261.1	262.0	262.0	263.0	263.0	263.0
22.5°	253.3	253.3	253.3	253.3	253.3	253.3	253.3	253.3	254.3	255.3	254.3
25°	244.6	244.6	244.6	244.6	244.6	244.6	244.6	245.6	245.6	245.6	246.6
27.5°	235.9	235.9	235.9	235.0	235.9	235.0	235.9	235.9	236.9	235.9	236.9
30°	226.3	225.3	225.3	225.3	225.3	226.3	225.3	225.3	226.3	227.2	226.3
32.5°	213.7	213.7	213.7	214.7	214.7	214.7	215.6	214.7	214.7	215.6	215.6
35°	202.1	202.1	202.1	203.1	203.1	203.1	203.1	204.0	204.0	204.0	205.0
37.5°	189.5	190.5	189.5	190.5	190.5	191.5	191.5	191.5	191.5	192.4	192.4
40°	177.9	177.0	177.9	177.9	177.9	177.9	177.9	177.9	178.9	179.9	179.9
42.5°	164.4	164.4	164.4	164.4	164.4	164.4	165.4	165.4	165.4	166.3	166.3
45°	150.8	149.9	149.9	149.9	149.9	150.8	149.9	150.8	150.8	151.8	151.8
47.5°	136.3	136.3	136.3	136.3	136.3	136.3	136.3	136.3	136.3	137.3	136.3
50°	123.8	122.8	121.8	121.8	120.9	121.8	120.9	120.9	120.9	121.8	120.9
52.5°	109.3	108.3	107.3	107.3	107.3	106.4	105.4	105.4	105.4	104.4	104.4
55°	96.7	95.7	93.8	94.8	92.8	91.9	91.9	90.9	89.9	89.9	89.0
57.5°	83.2	82.2	81.2	80.3	80.3	78.3	77.4	76.4	75.4	74.5	72.5
60°	71.6	69.6	67.7	67.7	66.7	65.8	63.8	61.9	60.9	59.0	58.0
62.5°	59.0	57.1	55.1	54.1	53.2	52.2	50.3	48.3	46.4	45.4	43.5
65°	47.4	45.4	43.5	42.5	41.6	39.6	37.7	35.8	33.8	31.9	30.9
67.5°	35.8	33.8	32.9	30.9	30.0	28.0	26.1	25.1	23.2	21.3	18.4
70°	26.1	24.2	22.2	21.3	20.3	18.4	17.4	15.5	13.5	12.6	10.6
72.5°	17.4	15.5	14.5	13.5	12.6	11.6	9.7	8.7	6.8	5.8	4.8
75°	10.6	9.7	8.7	7.7	6.8	5.8	4.8	3.9	2.9	1.9	1.0
77.5°	5.8	4.8	3.9	3.9	2.9	1.9	1.9	1.0	1.0	1.0	1.0
80°	2.9	1.9	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
82.5°	1.0	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: P642289

CATALOG NUMBER: ML5612LSWW97FS1E - 592SC WW - 600LM - 4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0
2.5°	293.0	293.0	293.0	293.0	293.0	293.0	293.0	293.0
5°	292.0	292.0	291.1	292.0	291.1	291.1	291.1	292.0
7.5°	289.1	289.1	289.1	289.1	289.1	289.1	289.1	289.1
10°	285.3	285.3	285.3	286.2	286.2	286.2	285.3	286.2
12.5°	281.4	281.4	281.4	282.4	281.4	282.4	281.4	282.4
15°	276.6	276.6	277.5	277.5	276.6	276.6	277.5	277.5
17.5°	269.8	270.7	270.7	270.7	270.7	270.7	270.7	271.7
20°	264.0	264.0	263.0	264.0	264.0	264.9	264.9	264.0
22.5°	254.3	256.2	256.2	256.2	256.2	256.2	256.2	256.2
25°	246.6	246.6	246.6	247.5	246.6	246.6	247.5	246.6
27.5°	236.9	237.9	236.9	237.9	237.9	237.9	237.9	237.9
30°	227.2	227.2	227.2	227.2	227.2	228.2	227.2	227.2
32.5°	215.6	216.6	216.6	216.6	217.6	216.6	216.6	217.6
35°	205.0	205.0	205.0	206.0	205.0	206.0	206.0	205.0
37.5°	192.4	193.4	192.4	193.4	193.4	193.4	193.4	193.4
40°	180.8	179.9	180.8	179.9	180.8	180.8	180.8	179.9
42.5°	166.3	167.3	167.3	167.3	167.3	167.3	167.3	166.3
45°	151.8	152.8	152.8	152.8	152.8	152.8	153.7	153.7
47.5°	136.3	138.3	138.3	138.3	137.3	139.2	138.3	138.3
50°	120.9	120.9	121.8	121.8	122.8	122.8	122.8	122.8
52.5°	105.4	104.4	105.4	105.4	106.4	105.4	106.4	105.4
55°	88.0	88.0	88.0	87.0	88.0	88.0	88.0	88.0
57.5°	72.5	71.6	70.6	69.6	69.6	69.6	68.7	69.6
60°	56.1	54.1	55.1	53.2	52.2	51.2	51.2	50.3
62.5°	41.6	39.6	38.7	37.7	35.8	33.8	33.8	32.9
65°	28.0	26.1	25.1	23.2	22.2	21.3	20.3	20.3
67.5°	17.4	15.5	15.5	14.5	13.5	12.6	11.6	11.6
70°	9.7	8.7	7.7	6.8	6.8	5.8	4.8	4.8
72.5°	3.9	2.9	2.9	1.9	1.9	1.9	1.9	1.0
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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

Signify Classified - Internal
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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)